

After the Adjutants

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dish-brown, the feathers mostly tipped with olive-green; wings ultramarine blue; secondaries (except the innermost already mentioned) and primaries are black on their inner webs, greenish-blue on their outer; abdomen, flanks and thighs indigo blue; under tail-coverts white; bill, head-shield, legs and feet red. Total length, 18 inches; wing, 9.5; tail, 3.5; bill at gape, 1.5; width of head-shield at posterior margin, 0.87; tarsus, 3.25; middle toe, 3.37; claw, 0.75.

After the Adjutants.

BY C. T. BINGHAM.

To the south-east of Moulmein, about twenty-five miles up the Attaran River, a low but excessively steep and scarped range of limestone rocks, called the Needong hills, run nearly at right angles to the river on the north bank, and overhanging the water present a strikingly bold and picturesque outline. On the south bank this range is broken into four or five isolated masses rising abruptly from the surrounding plain.

In the latter end of November and in December these almost inaccessible cliffs afford safe nesting sites to the two species of Adjutants, *Leptoptilus argala* et *javanica*.

Last January, twelvemonth, while going up the Attaran River on a shooting trip with a friend, I had seen the Adjutant in immense numbers feeding their young on the topmost pinnacles of these rocks; and, concluding from this that their laying time must be some time in November or December, I there and then determined to make a raid on their nests at the end of the year. Detained by my duties in the frontier forests till the first week in November, and having on my return to Moulmein a lot of work to do, I began to fear that for this year I should be unable to carry out my project.

However an opportunity at last presented itself on the 27th of November. Mr. K., a botanist en-route to Penang and Malacca, happened to touch here and put up with my "Chief." The steamer on board of which he was a passenger being likely to be detained here four days, Mr. K. expressed a wish to make a trip to some of the limestone hills in the vicinity of Moulmein in order to investigate their botany.

As some one had to accompany him, I was deputed to the task, and was only too delighted, as it would enable me to carry out my long-cherished scheme against the Adjutants. I went and saw Mr. K. and settled preliminaries. A Kulah, or



Chittagong boat, was engaged, and directed to row over night to Nanteh, a village some eight miles up the Attaran, as by our going overland to Nanteh and starting from there on the morning we saved a bend of the river and a hard pull of four hours. As I expected the tide to serve at Nanteh at 6 A.M. I had hoped to have got off with Mr. K. by 4-30 A.M., but as it happened, one delay after another detained us, and it was 7-30 before we were fairly off. Mr. K. and myself in one gharry, and two gharries in front filled up to the windows with Mr. K.'s tent, bedding, drying-presses, portinanteaus, &c. I myself only took my bedding, guns, and ammunition, and a few stout ropes to help me up the rocks. A native taxidermist accompanied me, who had in his charge skinning apparatus, arsenical soap, paper, &c.

Time works wonders, and by his good help even a Moulmein gharry and pony accomplished the four miles by road to Nanteh in something over an hour and a half. Arrived here, by good luck, for nothing seems to be carried out punctually in Burmah, we found the boat I had despatched over night awaiting us, and so immediately proceeded to stow away our things, and the three servants we were taking with us. While I was attending to this seeing, that the bedding was spread comfortably for us to recline on, it being an impossibility in these boats to sit on a stool or chair, Mr. K. began teasing a handsome tame Peacock which was strutting about near the village; and ere I had finished my arrangements, had concluded the fourth and last round of a single combat with it. As Mr. K. was a very little man, it was an open question as to which would win, and I looked up rather anxiously from the boat to see whether the fight was going to be continued, as in case there had been another round I should, I think, have backed the Peacock.

Poor K., he was one of the best fellows I have ever met, and has since, I very much regret to say, fallen a martyr in the cause of his beloved science.

Everything being at last arranged and stowed away, we got in and shoved off, carrying up with us the very last of a very weak flood. The morning was bright and frosh, a gentle breeze was blowing down the river, and all Nature was thoroughly alive. Bright Kingfishers (*Pelargopsis burmanica*, *Halcyon smyrnensis*, and *pileata*) flashed among the mangroves lining either bank, or flew across the river in front of our boat, with harsh chattering screams. Tall Snow-white Egrets stood in retired nooks on the muddy shore, while underneath the banks, in the thick covers of the mangroves, skulked the solitary Waterhen (*Gallinula phœnicura*). High over head the large

Paroquet (*Palæornis magnirostris*), in parties of four and five, skimmed with wild shrill screams swiftly from bank to bank, while lower down large numbers of crows (*Corvus insolens*) with lazier flight, were winging their way to their hunting grounds in the city. *Corvus insolens*, by the way, is a strictly town bird; you only meet with him in the towns or large villages where in mischief, insolence, and the ability to produce diabolical noises, when a fellow wants to sleep or work, he equals if not surpasses his paler brother of India.

On either side, as seen from our boat, the banks seemed lined with thick jungle stretching away unbroken on the right to the Tongwine hills, and on the left to the limestone peaks of Dalmatteah on the Gyne river, while above and beyond these, and lost in the faint morning haze, rose the far distant ranges on the Upper Gyne and Houngraw Rivers.

Admiring scenery from a Kalah or Chittagong boat is a difficult matter. You cannot sway your body the slightest bit to the right or left, but the boat lurches and wriggles about in a most annoying manner. They are heavy unweildy crafts these boats, and yet they are the chief means of transit on the long-winding rivers in Tenasserim.

Immensely long, narrow, and round-bottomed, they are hollowed out of single solid logs of Thengan (*Hopea odorata*), and have their sides raised by a planking of teak. From near the stern to about half way they are boarded so as to make a sort of deck with lockers underneath; while as protection from sun and rain, a low awning of bamboo matting, supported on half hoops of strong cane, covers over the whole of the boarded portion. In front of this deck, and nearly to the prow, thwarts are placed across, and one lengthways for the rowers to sit on, a small bit in the extreme front being also formed into a locker by boarding above. Our boat crew consisted of five men, four to row and one to steer and direct, the rudder used being a clumsy heavy paddle. The oars also are long, heavy and massive, being passed through loops of cane on the gunwale and not over rullocks.

Ordinarily the crew of one of these boats consists of three men, but I had specially bargained for four rowers, and it was well I did so, for before we arrived abreast of the village of Kymyan eighteen miles up, the tide turned against us, and it was only by hard pulling we got within sight of the Needong rocks by 12 o'clock, and we did not get ashore till past 1 o'clock.

As we passed under the hill overhanging the left bank of the river, I was delighted to see the Adjutants in full force, two or three crowned each pinnacle, and here and there through the green foliage showing white against the blue rock, I could see

the large guano-soiled masses of sticks which composed their nests.

Mr. K. was eager to land and commence botanizing at once, and I myself was anxious to essay the climb, but prudence whispered the necessity of seeing to our encamping ground for the night, and buying materials for our dinner, so we went on for half a mile or so to the village of Needong, which consisted of a score or so of bamboo-built houses, raised on posts after the manner of the country, and stragglingly built for a mile along the south bank. Landing, we walked to an inviting-looking bamboo grove, underneath which, as there was perfect shelter from the sun, orders were issued to pitch the tent, while Moungh Shway Hameyah, a Burman we had brought with us as interpreter, was despatched to the nearest Karen house for a couple of guides. Whilst waiting for these I examined through my binoculars the nearest limestone hill, an isolated peak about a mile and a half off, and I was pleased to see two Adjutants standing on a conspicuous rock, with a whitish patch near them, which I took to be their nest. As Mr. K. was indifferent to what limestone hill we should go first, and this was nearest, we determined to make our preliminary excursion thitherwards. Having given orders to the cook about the purchasing of fowls and our dinner, and Shway Hameyah having returned with the two guides, I proceeded to explain to them that we wished to get to the top of that hill, pointing at it. At first they shook their heads and declared it was impossible; but, seeing we were determined to attempt it, and being further tempted by the promise of a liberal reward, one of them admitted that he knew of a spot on the north side where it was just possible to scramble up by help of roots and trees.

This matter having been satisfactorily decided, one of the two guides had a basket made over to him, and told that he must keep close to Mr. K. To the other I gave my bird stick, carrying my gun myself.

The road at first lay across wet paddy-fields, and the only birds flushed were Tit Larks (*C. rufula*) and a Paddy Bird or two (*Ardeola grayi*); but just as we got to the end of the fields, a sudden rise and "scape" announced the departure of a Snipe—no doubt the common Snipe of these parts, a Pintail (*Gallinago sthenura*); he was far away before I could get my gun to bear on him, and dropped among some trees to the right.

Having got clear of the paddy, we entered a gently undulating plain covered with dense evergreen bushes and a few small bamboo clumps. Closer in to the hill we got into a denser and more matted belt of evergreen that surrounded its base, from which the rocks rose sheer and abrupt towering above and

hanging over each other in most fantastic shapes. It was with some difficulty we worked round towards the north side of the hill, as besides the thickness and thornyness of the jungle the ground under foot was spongy and moist to a degree. However at last our guide stopped, and pointing to a sort of rough gap between two of the lower large rocks, said this was the spot to attempt the climb—and a very nasty break-neck looking spot it was, and I didn't half like the look of it all, more betoken I had foolishly left my ropes at the camp. However there was no help for it, and my mouth was watering to see the number of Adjutants wheeling above the hills, all or most of which had probably nests somewhere on the top.

As to K. he gazed hopelessly up, and then declared he would leave the honor of the ascent solely to me, and would himself mouse about at the foot for lichens and algæ.

There being no time to lose, I took off my coat, tightened my belt, and taking only my gun, already loaded, with a cartridge of No. 1. shot in each barrel, and slung on my back to leave my arms free, I requested my Karen guide to lead on. And lead on he did straight up the face of the rock, clinging on to roots, and projecting knobs of rock in a marvellous manner. I did my best to imitate and follow, but had several times to shout to him to wait for me; and was soaked through with perspiration, and blowing like a broken-winded horse before I got to the first nest which was placed on the flat surface of a block of rock nearly at the top of the hill. A hasty glance at it showed me four eggs resting on a mass of twigs and sticks with scarcely any depression in the centre, and unlined. Below this was a substructure of larger sticks; the whole mass, and the rock on which it was, whitened by the droppings of the birds—the eggs, large white ovals, chalky, stained, and dirtied, as like as possible to eggs of the Common Vulture (*Pseudogyps bengalensis*). Having secured this prize, I looked around and saw that there were no less than eight other nests in sight, and in three I saw eggs. These also I managed to secure, although the way over the rocks was rough and jagged in the extreme, and once I had to swing myself over a low cliff of about fifteen feet by a root. One nest out of the three contained two eggs, the other two, one each; in these the eggs were fresher and whiter, the nests themselves being similar to the first described.

A little further climbing brought me to the highest peak of rock on the hill, and here I sat down for awhile to enjoy the scene and cool myself. In front of me, and seemingly at my feet, lay the Attaran winding like a silver thread, between walls of green forest, and losing itself round the corner of the next range of

limestone rocks beyond the village of Ngabeemah. Far to the north and west I could see the Gyne and Salween with their forest and mountains standing clearly out in the rays of the western sun, while behind me the unbroken jungle stretched away till lost in the meeting of earth and sky; and more to the left, as I turned round, appeared range upon range of these wondrous limestone rocks, giving a glimpse over their crests, and between them, of the "meeting of the waters" of the Zamee and Winyeo streams (called, after their junction, the Attaran), and the jagged crest of the mightiest range of all the limestone hills—the Atlantea on the Winyeo River.

And now as the sun was sinking rapidly, I had to think about getting down. So stowing three eggs in my pockets and four in my handkerchief, I gave the Karen my gun, which by the way I found useless, the Adjutants wheeling about but keeping out of killing range; however I managed to identify them as *Leptoptilus argala*, all of the larger kind, and began the descent. But if the ascent was ticklish, this was simply diabolical. Several times I barked my elbows and knees, and twice or thrice stopped to see whether the eggs were not broken. Never was way so long, but down I got at last, and miraculously the eggs were safe. How thankful I was I need not say, for I was rather exhausted.

I found that K. had his basket nearly full, and was ready to start back, so off we went making tracks, like one o'clock, for the "shades of night were falling fast." *En route*, I shot a grand specimen of *Myiophoneus eugenei*. Arrived at camp, a bath, a good dinner, and a pipe, sent me to bed a happy and contented man.

Poor K., who had been expecting an attack of fever, he had been suffering from jungle fever, quite cock-a-hoop that he had escaped it for that night, retired about 9 p.m. Alas! for his triumph, it came on about 12 o'clock, when hearing him moving about I roused myself, lit a candle and went over to his tent. I found the poor fellow seated outside on a log, and he told me he had had his cold fit, and was now feeling burning hot. After some persuasion I got him to turn in again, and after a little while retired to my own bed, when I lay awake for a long time listening to the "voices of the night." If the moonlight nights are calmly and peacefully beautiful, how sublimely grand the dark nights are, when in the depths of the forest surrounded by mighty trees, one realizes that darkness which can be felt, and a weird and awful calm enhanced by the unfrequent cry of some night bird, or prowling beast.

Slowly hushed by the murmur of the passing waters in the river I fell asleep, and only awoke when light was dawning

in the east. Having washed and dressed, I walked over to K.'s tent and found he had got up; and, though feeling extremely weak and ill, was determined to try the hills on the opposite bank. Breakfast was first the order of the day; that finished, and all things packed, (for we did not intend to come back) we took boat and set off down the river a little.

I had by much questioning ascertained from our guides that the most accessible point was on the south-west side of the hills, which consisted of six or seven peaks joined by a continuous knife-like ridge. Passing the overhanging rocks, we landed as soon as we could find a suitable spot for getting on shore, as the tide was out, and there was a long reach of deep mud to get across. A walk of ten minutes across old deserted gardens overgrown with kyne grass, and past a ruined hut, put us at the foot of the hill.

Here we found that the path up the rocks, for there actually was one at this place, used by the Karens for getting to the caves where the honey bee builds its combs, presented as rugged a climb as the hill of yesterday. For Mr. K. in his weak state it was impossible to get up, but for me I had the whole day before me, and determined to do it leisurely, collect the plants for Mr. K., eggs for myself, and search particularly for *Turdini* which I knew frequented these rocks.

Leaving one Karen with Mr. K., and taking with me a basket for plants, my gun, bird stick, and a few cartridges, I started. At first the road was easy enough, but about a third of the way up we came to a non-plus, at the foot of a very steep cliff. Here, while my guide was searching about for the lost track, I set to work to collect a few plants.

"Chucka—chucka—chucka"—and a flock of little brown birds came down the hill flitting in and out of the holes in the limestone, and disappearing in a mysterious manner.

Before, however, they had scrambled quite out of sight I managed to shoot two; they proved to be *Turdinus crispifrons*. I had just slung these on to the bird-stick, when my guide returned and informed me that he could find no path up. I looked at the cliff in front, a root of some species of *Ficus* hung from the top to within six feet of where we were: as it would never have done to turn back, I slung my gun and bird-stick, and giving the basket of plants to my follower, began the climb; and a fearfully tough struggle it was, but I succeeded. What a sight burst on my eyes! Right in front of me, the face of the rock for a considerable way, right and left, was covered with a lovely pink orchid (*Callanthi rosea*) flowering in the wildest luxuriance. After waiting awhile to take breath

and collect a good lot of these, we went on again; and thus stopping now and then to collect plants and then desperately working up we got by degrees to the top. This hill was, if possible, more difficult to get about than the one climbed yesterday: the limestone being worn into a series of the most acute needle points, and sharp knife-like ridges exceedingly trying to one's feet.

At the top I found three more nests of Adjutants similar to those of yesterday, with eggs. One bird I fired at, but after sailing off apparently unhurt, I saw it fall a long way out in the forest.

I was much struck by a curious noise the Adjutants made when disturbed, a sort of loud grunting croak, not unlike the low of a buffalo.

Slowly I worked my way along the ridge, rapidly filling my basket with plants; and finding several fresh but empty nests of the Adjutants. One pretty brown-spotted yellow Orchid* I found hanging in a tuft overshadowing one of the nests.

The sides of the whole little range of rocks was covered with evergreen, and several clumps of a pretty feathery light looking bamboo.

The scenery presented a picture very similar to that of yesterday, but the Attaran river was more directly under my feet; and indeed I climbed on to a projecting rock, and peeping very carefully over, I found that had I wished to take a header of some 300 feet or so I could plunge sheer into the Attaran.

After wandering about for two or three hours I became hungry, and thinking of tiffin began the descent, having carefully stowed away the eggs, and luckily, as will be seen presently, made them over to the Karen guide to carry. Oh what tedious work it was getting down, the sharp rocks cutting my boots to pieces and tearing my clothes, and just below the place I had got the pink Orchid I was let down with a run, by the breaking of a root to which I was hanging, and so bruising, rather severely my right leg. However, all things must have an end; and, though I had to crawl down very slowly and in great pain, I got down at last; and cheered by the knowledge of the eggs having been brought down all safe and sound, and the prospect of tiffin, I limped my way to the boat in good spirits.

At the little ruined hut, I was distressed to find poor K. down with fever, and feeling altogether very weak and ill. He roused himself, however, at the sight of my basket of plants and set to work pressing them.

* Probably *Cypripedium concolor*.—Ed., S. F.

Tiffin over, of which poor K. partook but sparingly, and there seemingly being little hope of his getting rid of his fever here, I proposed returning to Moulmein; and, accordingly, as soon as the tide served, we paid off our Karen guides, took to our boat, and by 9 P.M. were back in town. Thus ended a most enjoyable trip to me, but for poor K.'s illness.

A second* list of the Birds of Southern Travancore.

My friend, Mr. Bourdillon, has most kindly sent me a second small collection of birds from Southern Travancore, which contains several species of much interest, and I shall, therefore, not hesitate to give a list of all those not contained in our first list (though these are only 28 in number), together with a few additional remarks on species previously included.

The most important of the specimens contained in this collection are one of Jerdon's long lost species, hitherto supposed to be nothing but Cetti's Warbler, but now proved to be a perfectly good and distinct species, *Schaniicola platyura*, two of *Trochalopteron fairbanki*, and one of *Callene albiventris*, hitherto supposed to be peculiar to the Pulneys, and one of *Merula kinnisi*, similarly till now believed to be restricted to Ceylon.

In the subjoined list, species whose names are printed in antique type are new to our list; those printed in roman were included in our first list. •

24.—*Accipiter nisus*, *Lin.*

A nearly adult female; wing about 9·4.

36.—*Spizaetus nipalensis*, *Hodgs.*

A fine young male of this species is sent. The dimensions recorded in the flesh were as follow :—

Length, 27·5; expanse, 53; tail from vent, 12·5; wing, 16·5; tarsus, 4·25; bill from gape, 2·0; width at gape, 1·25; crest, 3·75.

The bill and claws were black; the cere and feet yellow; the irides yellow.

37.—*Lophotriorchis kienerii*, *Gerv.*

An adult, perfectly black above, and, except the chin and throat, deep rufous, a little streaked with black, below; sexed a female; wing, 15·7; tarsus, 3·0. Mr. Bourdillon remarks :—

* For first list, see S. F., IV., 351.

"This Eagle, which was given me by a friend, was shot at an elevation of about 2,200 feet, while in the act of swooping at a chicken. Near at hand, however, were high precipitous cliffs, rising to an elevation of fully 5,000 feet, where the bird probably had its home. Not long after obtaining this specimen an Eagle flew past me, while I was riding, which, from its deep chestnut-colored belly, I have no doubt belonged to this same species."

58.—*Circus pygargus*, *Lin.*

"This species" (says Mr. Bourdillon) "seems to be rather solitary in its habits. I observed it for the first time last year, and then only saw three or four singly hawking over grassy and rocky ridges."

53.—*Circus melanoleucus*, *Forst.*

An immature female; but with the unmistakeable long tarsus, 3.18 in length.

75 *quat.*—*Scops malabaricus*, *Jerd.*

Three nestlings, which I believe unquestionably belong to this well-marked species, have been sent. These were brought to him, Mr. Bourdillon says, when still entirely in down, and kept alive for some time in hopes of securing a record of their changes of plumage as they advanced to maturity. Unfortunately they were allowed to die by the carelessness of servants during a temporary absence from home before they were even fully fledged.

I think that Mr. Sharpe is wrong in uniting this species with *S. indicus*, Gm. (*vide* S. F., Vol. V., p. 135,) and these specimens are certainly unlike any stage of that species, of which I have seen simply hundreds in every possible stage of plumage.

96.—*Chaetura indica*, *Hume.*

Mr. Bourdillon says: "This species is abundant at all times of the year when the weather is fine and clear, and during the early showers of April a flight of Swifts is a pretty sure indication of the approach of a storm. The flight of these Swifts is magnificent; their speed almost incredible; the rushing noise made as they dart through the air quite startling. I was much interested the other day in watching a flight of these Swifts feeding on a crowd of Termites that, as is usual at this time of the year, were swarming up from their underground nest. I was close enough to see that at the instant of capture the Swifts detached and rejected the wings of their prey."

117.—*Merops viridis*, Lin.

This, though not previously sent, appears, as might have been expected, to be common.

224.—*Arachnothera longirostris*, Lath.

I am not aware that this species has as yet been recorded from Ceylon. Indeed the present is the most southern locality in India where I know it to occur. Mr. Bourdillon records the following :—

Female.—Length, 5·5 ; expanse, 7·37 ; tail, 1·43 ; wing, 2·38 ; tarsus, 0·62 ; bill at front, 1·35. Bill, black above, below pale horny ; legs, feet, and claws, pale slatey blue ; irides, dark brown.

This specimen was procured on the 24th of November.

264.—*Tephrodornis sylvicola*, Jerd.

Of this species, rare I believe in collections, Mr. Bourdillon has recorded the following measurements :—

Male.—Length, 8·25 ; expanse, 13·38 ; tail, 3·12 ; wing, 4·5 ; tarsus, 0·78 ; bill from frontal bone, 1·1.

Female.—Length, 8·0 ; expanse, 13·5 ; tail, 3·5 ; wing, 4·5 ; tarsus, 0·8 ; bill as before, 1·05.

270.—*Grauculus macei*, Less.

This also seems not uncommon ; the birds belong to the somewhat smaller race that Blyth separated as *G. layardi*, but which are not really entitled to specific separation. (See S. F., II., 204.)

309.—*Cyornis pallipes*, Jerd. S. F., IV., 397.

This species is said by Mr. Bourdillon to be not rare, although nowhere common, in all heavy jungle from 1,000 feet and upwards.

339 bis.—*Callene albiventris*, Fairb. S. F., V., 402.

The same remarks apparently apply to the present species.

360 bis.—*Merula kinnisi*, Keluart, Blyth.

This species, says Mr. Bourdillon, is not uncommon in the dense scrub jungle at the extreme summits of the hills, but it never, he thinks, descends below 3,000 feet elevation.

The Ceylon Blackbird so closely resembles *M. similima*, of the Nilgheris, that it may at first sight be supposed that I am in error in this identification, the more so that the Travancore birds are rather larger than the typical Newera Elia ones.

The only differences that I can discover between the two species are that *kinnisi* is smaller—wing about 4·5 against 5·0 in *simillima*, and that it is also distinctly darker in colour above and below. Blyth, in the *Ibis*, 1867, p. 304, gives the following description:—

“*Male*.—Jet black, with orange-coloured legs, bill, and orbital skin.

Female.—Above ashy-black, below rather paler; bill and feet bright yellow.

Length about 9 inches; wing, 4·5 inches; tail, 4 inches; bill to gape, 1·82 inches; and tarsi, 1·82 inches. First short primary 1·25 inches shorter, and second 0·5 inches shorter than the fourth, the last character distinguishes this species readily from *M. simillima* of Southern India.”

Now I must say that I do not think that the male can properly be called *jet* black. It is no doubt much darker than the Nilgheri birds, but it is never more than slatey black. As to Blyth's dimensions for the primaries, these are all wrong. Taking a series I find that the 1st primary averages 2·55 inches shorter than the 4th, and the 2nd, 0·6, and the 3rd, 0·1. Moreover, this is much the proportion of the primaries that exists in *simillima*, and it is not at all possible to separate the two species with reference to this point.

The Travancore bird is as dark as any of my Newera Elia ones, but it is slightly larger, the wings measuring 4·7, while in my Newera Elia birds the wings only vary from 4·45 to 4·6.

390 *bis*.—*Alcippe bourdilloni*, *Hume*. S. F., IV., 485.

Another specimen of this interesting species precisely resembles the type. It is a female, and measured in the flesh—Length, 5·24; expanse, 6·5; tail, 1·89; wing, 2·25; tarsus, 0·9; bill from frontal bone, 0·63. Bill, above black, below pale slatey; legs and feet dull brown; irides, white.

423 *bis*.—*Trochalopteron fairbanki*, *Blanf.* S. F., III., 413; V., 404.

This species, Mr. Bourdillon tells us, is found in the same places as *M. kinnisi*, and is there pretty abundant. He records the following dimensions of two specimens:—Length, 8·5, 8·75; expanse, 10·28; tail, 3·5, 3·62; wing, 3·25, 3·32; bill from gape, 0·9, 0·98.

Judging from the description (for I have never yet succeeded in obtaining a specimen of the Banasore bird), *fairbanki* differs from *T. jerdoni* in having no bluish tinge on the head, in having the feathers of the foreneck and breast more or less con-

spicuously dark shafted, in not having the ear-coverts whitish, and in having the under tail-coverts ferruginous like the abdomen and not olivaceous as *jerdoni* is said to have. I feel by no means certain that the two will prove to be really distinct.

The Travancore hill birds seem to differ slightly from the Palni birds; the crowns are not nearly so dark; the ear-coverts are browner, the sides of the neck olivaceous and not grey as in the Palni birds; and the throat and upper breast are much paler, almost white in fact, and much more conspicuously paler shafted. I have not a sufficient series to enable me to determine whether these differences are constant and sufficient to warrant their separation, but I am inclined to doubt it.

442.—*Schœnicola platyura*, *Jerd.*

The re-discovery of this long lost species is one of the most interesting results of Mr. Bourdillon's labours.

He obtained one specimen, a female, on the 18th April in open grass land at Colathoorpolay Patnas, at an elevation of 3,800 feet in the Assambo Hills, the southernmost section of the Western Ghâts, in fact about three degrees due south of Goodalore where the lost type and hitherto unique specimen was obtained, and in what is virtually a continuation, though broken, of the same range of hills.

The specimen measured in the flesh:—

Female.—Length, 5·75; expanse, 8·0; wing, 2·5; tail, 2·5; tarsus, 0·88; hind toe and claw, 0·6; claw only, 0·29; mid toe and claw, 0·83; inner and outer toes equal without claws, and without claws, exactly equal to middle toe without claw and terminal joint; claw of inner toe larger than that of outer toe; 3rd, 4th, and 5th quills equal, possibly 4th a shade longer, 2nd quill 0·4, and 1st quill 0·9 shorter than 4th. Vible portion of 1st quill, 0·8 long and about 0·2 wide. Tail of ten feathers (in this specimen, and none seem wanting); feathers soft and very broad, much rounded; two central pairs about the same length, the three succeeding pairs each 0·25 shorter than preceding; the lower tail-coverts are very full and lax and extend just to the tips of the shortest tail feathers, or to within 0·75 of the end of the tail. Bill almost precisely like that of *Dumeticola affinis*, (to which the whole upper surface bears a strong resemblance) but stouter; culmen, from frontal bone to tip, 0·58.

The whole upper surface of the bird is a rich rufescent olive brown, a shade browner and deeper colored than in Cetti's Warbler, and perhaps the faintest shade less rufescent than in *Dumeticola affinis* and *bruniceps*. The crown and tail are rather browner; the tail obsoletely rayed darker. The inner webs of the quills

hair brown; the whole upper plumage lax, and exactly that of *Dumeticola affinis* in texture; plumage of rump and upper-tail very full, the latter reaching within 1.1 of end of tail; lower surface brownish ochraceous, a little fulvous white down the centre of the abdomen; the bases of the feathers of the throat white, showing through where these are disturbed. The sides and flanks much the same colour as the upper surface; the lower tail-coverts rather paler and faintly margined, still paler at the tips; the under surface of the tail *very* distinctly rayed, I might almost say barred, lighter and darker. Edge of the wing and wing-lining pale fulvous fawn; ear-coverts brownish rufous, many of the feathers with extremely narrow rufescent white shaft stripes.

I myself should not separate this bird generically from *Dumeticola affinis*. *Dumeticola*, of Blyth, dates from 1845, and was founded on *S. arundinacea*, Lath., and is apparently synonymous with *Calamodyta*, Mey. and Wolf., 1815. [*Schœnicola*, Bly., (*nec. Bp.*, 1851) dates from 1844.]

Now, neither our present bird nor *D. affinis* are congeneric with *arundinacea*, Lath., (*nec. Lin.*, which is *strepera*, Vieill.), which, with its minute first primary, &c., is a clear *Acrocephalus*, and I think both birds must stand now as *Schœnicola*.

In size and general appearance our present bird is very like Savi's Warbler, *Pseudoluscinia luscinoides* (wrongly united, as I think, by Mr. Dresser with *Locustella*), but it is rather deeper coloured above, and *much* more ochraceous rusty below. The wing in Savi's Warbler is of course quite differently shaped, with a small almost *Acrocephaline* first primary, and the bill is longer, slenderer, less deep, straighter and less curved on the culmen.

470.—*Oriolus kundoo*, *Sykes*.

471.—*Oriolus indicus*, *Jerd.*

473.—*Oriolus ceylonensis*, *Bp. S. F., I., 439.*

Specimens of all these three species are sent, and they are said to be common, but only to ascend the hills in the cold season.

516.—*Acrocephalus dumetorum*, *Blyth*.

A single specimen of this species is sent, obtained at My-nall, 7th March 1877.

***695.—*Ploceus manyar*, Horsf.**

Mr. Bourdillon remarks :—

“Not a hill bird. I got these two specimens on a lake a few miles out of Trevandrum, the Vellarney lake, where there were thousands in June just beginning to weave their nests amongst the reeds which formed floating islands in the lake.”

***697.—*Munia malacca*, Lin.**

Another species from the same locality as the Weaver Birds, and also breeding in June.

795.—*Turtur suratensis*, Gm.

Not uncommon.

355.—*Lobivanellus indicus*, Bodd.**856.—*Lobipluvia malabarica*, Bodd.****870.—*Gallinago sthenura*, Kuhl.**

Of this latter species Mr. Bourdillon remarks :—

“This specimen was obtained by Mr. Ferguson at 4,000 feet. The Pintail Snipe occurs in the cold season, at all elevations ; it is very scarce at the higher elevations, and most abundant in the rice fields in the plains. About Trevandrum they are much more abundant than *G. scolopacinus*.”

***902.—*Porphyrio poliocephalus*, Lath.**

Mr. Bourdillon says :—

“Obtained at the Vellarney lake, where they inhabit the reeds in great numbers, and though easy to shoot, are very difficult to retrieve.

In June the birds appeared to be much more scarce than when I visited the place in March ; but I heard numbers in the reeds, and I fancy they must have had nests in these.

***924.—*Ardea purpurea*, Lin.**

Abundant at the Vellarney lake, and breeding there in June.

930.—*Ardeola grayi*, Sykes.

Common everywhere.

A. O. H.

* The species to which an asterisk is prefixed ought not perhaps, strictly speaking, to be included in the list, as they were not obtained in the Southern Hill country about Mynall, where all Mr. Bourdillon's other specimens have been obtained.

Notes on the Nidification of some Burmese Birds, II.

BY EUGENE W. OATES, C. E.

IN a previous number of this Journal (V., p. 14), I have recorded notes on the eggs and nests of such birds as I had found nidifying in Burmah. The notes of a field naturalist accumulate so rapidly that they are liable in many cases to be overlooked after the lapse of time, or to form such an entangled mass of materials as to prevent him from ever re-perusing them with satisfaction. I, therefore, hasten to abstract into a concise form such further information, concerning the breeding of birds, as is contained in my note books.

Before proceeding with the nests and eggs of those birds not before mentioned by me, I wish to add a few remarks relative to some birds, concerning which my information was meagre at the time the previous paper was written.

3.—*Butastur liventer*, Tem. (48 ter.)

March 31st, Pegu.—Nest with two fresh eggs in a medium-sized tree. The eggs are rather smaller than those I took before, measuring 1.73 and 1.75 by 1.45 in breadth. Color as before. (S. F., V., p. 142.)

9.—*Coracias affinis*, McClell. (124.)

I was able to record the finding of young birds only in my previous notes. This year, 1878, I have taken numerous eggs.

The eggs, four or five in number, are laid on the bare wood at the bottom of large natural hollows in decayed branches of large trees. The holes selected are generally not less than 20 feet from the ground. The shell is pure white and excessively glossy. My eggs were taken from the 26th March to the 2nd April, and were in all cases either fresh or only slightly incubated. In size they vary from 1.45 to 1.26 in length, and from 1.13 to 1.07 in breadth. The average of 12 eggs is 1.37 by 1.09. (S. F., V., p. 143.)

15.—*Xantholæma hæmacephala*, Müll. (194.)

Here again I was able to record the finding of young birds only. This year I took several clutches of eggs from the 6th March to the 5th April. (S. F., V., p. 144.)

20.—*Arachnechthra flammaxillaris*, Bl. (234 ter.)

This bird appears to breed twice a year, if not oftener. I had found numerous nests in July and August, but this year

I got two nests in March, one with young birds on the 16th, and one with two fresh eggs on the 17th. In my former note I carelessly omitted to give the measurements of the eggs. In length they vary from '65 to '57, and, in breadth from '48 to '41; the average of ten eggs is '6 by '45. (S. F., V., p. 148.)

21.—*Upupa longirostris*, Jerdon. (254 bis.)

I succeeded in finding nests with eggs this year. One nest, found on the 10th March, contained two eggs quite fresh, and another found on the 7th April, three eggs, two of which were slightly incubated and the other addled. The nests in both instances were in natural hollows of large trees, and the eggs were placed on the bare wood. In color they are pale, spotless blue, and they measure on an average '91 by '67; two are quite without gloss, but three others are glossy to a very small extent. (S. F., V., p. 149.)

30.—*Timalia bengalensis*, G. Aust. (396 bis.)

Erroneously entered as *pileata* in my former list. This bird would appear to have two broods a year, for I procured two sittings, of three eggs each, this year in April, former nests having been found in June and July. With many eggs before me I find that the density of the markings varies considerably. The size is very constant; for the length of numerous eggs varies only from '75 to '72, and the breadth from '6 to '54. (S. F., V., p. 152.)

92.—*Pelecanus philippensis*, Gm. (1004.)

The only eggs I had of this species were some extracted from females shot in the Sittang River. Last November, however, it was my good fortune to visit a pelecanyry which, for extent, is possibly not surpassed by any hitherto visited.

On the 8th November 1877, I found myself at the pretty town of Shwayghoen, the head-quarters of the district of the same name. It is situated on the left bank of the Sittang about half way between Rangoon and Tounghoo. The country to the east of the river is everywhere very hilly, and the Sittang appears to have worked itself as far to the east as it is possible for it to get, for its further progress in that direction is prevented by bold projecting hills of laterite. The country to the west is, however, very different. It consists of an immense plain of indefinite length, extending to the westward to the foot of the Pegu Hills. Certain small tracts are cultivated, but the greater part of the plain is covered with elephant grass or forest, and intersected by numerous creeks choked up with drift and running nowhere in particular.

They all, however, ultimately discharge themselves into the Sittang. Considering that these creeks drain the whole eastern half of the Pegu Hills, and have no fall to speak of after entering the plain, it is not to be wondered at that the whole area now under notice should, during four or five months, *viz.*, from July to October or November, be nothing but a most dismal swamp, inundated to the depth of ten feet in many parts. Such country is suited only for fishermen, and we accordingly find them very numerous. Indeed, the fisheries in this plain yield a very large revenue and give employment to large bodies of men. It is not, however, my intention now to describe these fisheries nor the many ingenious methods employed to catch the fish in shoals with the minimum of labour. I merely wish to give some idea of the country in which Pelicans find a suitable home.

Leaving Shwaygheen with my friend, Mr. Hough, the Deputy Commissioner, we dropped down the Sittang for about ten miles till we reached the mouth of the Hsa-zay Creek on the right bank. We proceeded up this stream till evening when we landed at a fishery to dine. We, however, found the smell so bad that we pushed out into the stream to sleep. Next morning we reached Kadat, a small village where we expected to find the Pelicans. A well-built Burmese house afforded us comfortable quarters.

The whole stream from the Sittang to Kadat runs through beautiful forest with spare undergrowth, and in many places the stream narrowed so much that we had carefully to pick a way for the boat between the trees. Immense flocks of Pelicans and Adjutants were flying in circles over our heads the whole day. Monkeys were very common, and I saw more specimens of *Polioaetus ichthyaetus* during this trip than I have during the whole of my residence in Burmah.

We arrived too late in the day to do anything, but in the afternoon, strolling out, we saw a good many Adjutants' nests, but it was not easy to climb the trees.

On the morning of the 11th I started early with several Burmans into the forest. The floods had gone down, but the ground was very muddy, and in many places, for long distances, the water came up to my knees. Every quarter of a mile there was a depression or nullah to be crossed, and I soon gave up any idea I might have had of keeping myself dry. Walking was very laborious, for though there was no undergrowth or jungle to speak of, yet the roots of trees embedded in mud and water caused me frequently to trip up.

The whole forest consisted of very large trees, but a portion, about one in twenty, was made up of wood-oil trees, gigantic

fellows, 150 feet high and more, and with a smooth branchless trunk of 80 to 100 feet. These are the trees selected by the Pelicans.

I was out that day till 3 P.M., continually moving, and must have walked at least twenty miles in various directions, but never from first to last was I out of sight of either a Pelican's or Adjutant's nest. From what I saw, and from what the Burmans told me, I compute the breeding place of these birds to extend over an area about twelve miles long and five broad.

I shall describe the Adjutants' nests presently, but with regard to the Pelicans' I noticed that no tree contained less than three nests, and seldom more than fifteen. Some birds select the upper branches, placing their nest in a fork, but others, the majority, placed their nests on the nearly horizontal branches of the tree not far from the trunk. In all cases, the nests on one branch touch each other, and when these nests were on a horizontal branch, they looked like enormous beads.

Judging from the size of the bird I should say the nest is about two feet diameter, and when in a fork, to be about eighteen inches deep. Others on flat branches were shallower. They are composed entirely of twigs and small branches, and I could detect no lining in those nests which were thrown down to me.

The eggs are invariably three in number, and on the 11th November all I took were either fresh or only slightly incubated. The female bird sits very closely, and frequently I found that the bird would not fly off her eggs till I fired a gun. It was a most ludicrous sight to see the sitting birds stretch neck and head out of the nest to have a look at us, as often happened.

The only trees which the Burmans can climb on the spur of the moment are those which their arms can encircle. To be able to climb *any* tree it is necessary to make bamboo spikes the day before. These are driven into the trunk as the man mounts, and the operation, even for the tallest tree, does not take very long.

Notwithstanding the millions of birds which breed in this forest, a most wonderful silence prevails. The Pelican seems to be perfectly mute, and the Adjutants only bellow at intervals. The only sound which is constantly heard, and after a time even this sound passes unnoticed, is a sort of *Æolian* harp caused by the movement of the wings of innumerable birds high in air.

The eggs of this Pelican are pure-white at first. As incubation proceeds they change to a brown, and before hatching, become in some cases almost black. In texture, they are very

chalky, and when the outer coat of chalk is scratched or removed, the inner shell is smooth and white. The inner lining of the egg is white, and consequently the eggs of the Pelican can never be mistaken for those of either of the Adjutants, in which the lining is dark green. In shape, the eggs are rather long and narrow, equally pointed at both ends. The largest egg I have measures 3·3 in length and 2·08 in breadth, and the smallest, 2·95 by 2·05. Looking at a large number they appear more uniform in size than most eggs of large birds.

The following notes refer to those birds, the nests and eggs of which have been taken by me recently. Among them are six species, about the nidification of which I can find nothing on record :—

Syrnium seloputo, *Horsf.*

Palæornis bengalensis, *Gm.**

Ixos davisoni, *Hume.*

Sturnia nemoricola, *Jerd.*

Glareola orientalis, *Leach.*

Leptoptilos javanicus, *Horsf.*

97.—*Milvus govinda*, *Sykes.* (56).

There are three distinct species of Kites in Lower Pegu. *M. melanotis*, a huge bird with the basal half of the primaries white, and the general tone of the plumage bright reddish brown, is tolerably common during the cold weather in the neighbourhood of fisheries. *M. affinis*, the second species, is the most common, being found everywhere. The whole of the primaries in this bird is brown or black, with only some very insignificant white mottlings at the bases under the coverts, quite invisible when the bird is flying. Then there is the third species, the same size as *affinis*, but with the bases of the primaries conspicuously white, but much less so than in *melanotis*. This I identify with *govinda*. I am aware that Mr. Hume states (S. F., I., p. 161,) that *affinis* and *govinda* differ only in the former being of duller tints and of smaller size, leaving the reader to infer that the amount of white in both birds is equally developed on the primaries. Mr. Sharpe, however, in his diagnosis of species of this genus (Cat. 1, p. 319) points out how the two birds are to be separated, and my specimens bear out his statement. I have some young birds, however, the identification of which is difficult.

I found a nest of *govinda* on the 31st January with three eggs. (N. and E., p. 52).

* Should stand as *P. cyanocephalus*, *Lin.—Ed.*

98.—*Syrnium seloputo*, Horsf. (65 bis.)

I have not been fortunate enough to get the eggs of this species, but I have twice found the young birds. The eggs appear to be laid on the bare wood in the fork of a large peepul tree at no great distance from the ground. A young bird, about one month old, and just able to fly, was taken on the 20th April, and another one rather younger, on the 24th March. Eggs should, therefore, be looked for at the end of February and the commencement of March.

99.—*Ketupa ceylonensis*, Gm. (72.)

Nest in a fork of a large tree ten feet from the ground. Two young birds about one month old. March, 31st (N. and E. p., 64.)

100.—*Scops lettia*, Hodg. (75.)

March 24th.—This bird selects a small hole in medium-sized trees. Two nests, each with three young birds, varying in age from a fortnight to three weeks. (N. & E., p. 67.)

101.—*Dichoceros cavatus*, Shaw. (140.)

The mode of nidification of this and other Hornbills is now so well known that, being unable to visit the forests where these birds breed in great numbers, I felt no hesitation in sending a Burman to take the eggs for me instead of going myself. He brought me four eggs and the heads of two females with the following account: He found many nests, but could induce the Karens to climb only two trees. Both were wood-oil trees. The nests in both cases were placed in a decayed hole at the spring of the first branches, in one case at about 60 feet from the ground, and in the other somewhat higher. Pieces of the materials with which the holes were closed appear to be composed of dung and earth, with which are incorporated seeds of the peepul fig and bits of leaves and sticks. The two sitting birds were captured, and the heads are easy to identify with those of females of this species, the bills of the males being different. Each nest contained two eggs, one set quite fresh, the other on the point of hatching. They measure, 2·84, 2·6, 2·4 and 2·75 in length by 1·85, 1·9, 1·8 and 1·8 in breadth, respectively. The shell is rough and without gloss. One egg is pure white, two others, one fresh and one incubated, are a uniform pale yellow, and the fourth egg is white, with numerous small yellowish dots where the outer shell is disintegrated. The eggs were taken on the 22nd March. (N. & E., p. 111.)

102.—*Hydrocissa albirostris*, Shaw. (142.)

The same man on the 20th March procured one egg of this species. The egg was hatched a few moments before it reached me. It measured 1.8×1.3 , and was a deep reddish brown. Its natural colour was originally white I should think. On the 22nd March, my man again took a nest, killing the female and bringing me the head. The eggs were three in number, pure white and rather glossy. They were well incubated and difficult to blow. The nest was also in a wood-oil tree about 90 feet from the ground in a cavity among the lower branches. These three eggs measure 1.81 , 1.76 and 1.75 by 1.35 , 1.3 and 1.25 , respectively. (S. F., V., p. 84.)

103.—*Aceros subruficollis*, Blyth. (146 bis.)

The same man on the same date, viz., the 22nd March, found a nest of this species. Like the others it was placed in a wood-oil tree about 70 feet from the ground. It contained only one egg, which was nearly hatched. In color it is a dull white without any gloss, and the shell is rather rough to the touch. It measures 2.25 by 1.5 . These dimensions agree well with Mr. Theobald's. (N & E., p. 115.)

104.—*Palæornis bengalensis*, Gm. (149 bis.)

Nest with four eggs well incubated in a hole of a tree about six feet from the ground. The hole was a foot deep, very roomy, but the entrance, which had been enlarged by the bird, was only large enough to admit its body. The eggs were laid on the bare wood. Although the sitting bird was poked at with a stick, and it took fully half an hour to enlarge the hole in order to take the eggs, yet the bird could not be induced to quit the nest, and eventually had to be dragged out. When disturbed with the stick the female made a noise like the hissing of a snake. These eggs were taken on the 22nd February.

On the 2nd March two fresh eggs were taken from another hole, and on the 16th March another nest was found, also with two eggs well incubated.

The eggs are of course pure white, rather glossy when fresh, but becoming dull with incubation. The eggs measure from $.97$ to $.95$ in length, and from $.85$ to $.8$ in breadth.

105 — *Dicæum cruentatum*, Lin. (236.)

I have taken many nests of this bird from the 2nd March to the 9th April. The number of eggs is either two or three, just as often one as the other. The eggs are pure-white without any gloss, and are rather pointed at one end. They vary

in size from .58 to .55 in length, and from .42 to .38 in breadth.

The nest is generally built in mango trees, but other trees, specially if the leaves are large and drooping, are also used. It is placed at all heights from the ground, from twelve feet to the summits of the highest trees. The nest is suspended from an outside twig, and is so surrounded by leaves that it is almost invisible. When once the female begins to sit, all efforts to find the nest would, I believe, be useless. It is only by watching the little birds carrying materials, which they do incessantly and with a constant twitter, that I and my shikaree have been able to secure the nests.

To say that the nest is most beautiful is only to say what is applicable to the nests of all the Honey-suckers. The nest of this little bird is simply exquisite when newly built. It measures no more than four inches in total height, and one nest I have is only 3½. It is egg-shaped, slightly pointed at the upper end, where it is attached to the branch. Its external diameter is two inches. The entrance is circular, three quarter inches diameter, and placed just midway between the top and bottom of the nest. The egg chamber is small, the walls of the nest being of considerable thickness.

The bulk of the nest is made of the finest vegetable down of dazzling whiteness resembling spun glass; and exteriorly the nest is kept firm by being bound round with fine grass, which is twisted into a rope at the lower edge of the entrance. At the back of one nest there are few patches of *excreta* of caterpillars, and in another, four dry blossoms of some shrub are stuck to the back of the nest. As a rule, however, no ornamentation is attempted. (N. and E., p. 155.)

106.—*Ixos davisoni*, Hume. (452 quat.)

I believe this name has priority over *annectans* of Lord Walden. A nest of this bird was found on the 1st June, and another on 6th of the same month, both containing two fresh eggs each. The females, which were shot off the nest, showed, however, no signs on dissection of being about to lay more.

The nest is a flimsy structure built of the stems of small weeds and lined with grass. A few fine black tree roots are twisted round the inside of the egg chamber. The outside and inside diameters measure four and three inches, and the depths ~~are~~ similarly three and one quarter. Both nests were placed low down about four feet from the ground—one in a bush and the other in a creeper.

The two pairs of eggs vary much in size. Two are .92 and .88 by .60 and .65, and the other two .83 and .82 by .65 and

·61; the ground color of all is a pinkish white. In one pair the shell blotches of washed-out purple are spread over the whole egg, and the surface spots and dashes of carneous red are also equally spread over the whole shell. In the other pair the shell marks are grouped round the larger end to form a broad ring, and the whole egg is thickly speckled and spotted with bright reddish. The eggs are very slightly glossy.

107.—*Oriolus melanocephalus*, (472.)

My nests of this Oriole have been found in March, April, and May, but I have no doubt they also breed in June. No details appear necessary. (N. and E., p. 301.)

108.—*Prinia hodgsoni*, Blyth. (538.)

Nest with three fresh eggs on the 19th August; no details appear necessary except the colour of the eggs, since this bird appears to lay two kinds of eggs. My eggs are very glossy, of a light blue, speckled with minute dots of reddish brown, more thickly so at the large end than elsewhere. (N. and E., p. 342.)

109.—*Sturnia malabarica*, Gm. (688.)

110.—*Sturnia nemoricola*, Jerd. (689 quat.)

Both these birds are equally common throughout Lower Pegu. Mr. Hume (S. F., IV., p. 333) wishes to unite the two.

The two birds, however, although they associate in the same flock and have a general superficial resemblance to each other, are quite distinct. Apart from the fact that *nemoricola* has the winglet and primary coverts always with some white on them varying in extent with age, and *malabarica* never has a single white feather on those parts, there is another constant and never-failing* point of difference between them, and this lies in the colour of the spurious first primary. In *nemoricola* it is always white; in *malabarica* it is always black. I have a very large series of both birds, and this distinction always serves to separate with precision those birds which are white, or have some portion of white on the winglet and primary coverts, and on the other hand those birds which have no white on those parts. As to the amount of white in *nemoricola* I am convinced it is only a matter of age. But no bird, however young, with a white spurious first primary, is without at

* This distinction does out hold good; we have several unmistakeable *nemoricola*, white on wing, pale under surface, with this spurious primary black. I have fully discussed the question of these races, S. F., VI., 390, which, though printed nine months ago, had not been issued when Mr. Oates wrote.—A. O. H.

least one white feather on the coverts. On the other hand no bird with a black spurious first primary has ever a white feather on the wing. Even if one could be found it would not invalidate my diagnosis, for all these Mynahs are subject to albinism.

If we take newly-moulted birds of the two species, we shall find that while *malabarica* has the lower plumage almost a deep chestnut, in *nemorica* those parts are never more than a palish ferruginous, tinged in the case of very old birds with most beautiful rose colour. These birds feed much in long grass, and the feathers below are soon worn short. Nature has, however, provided them with two moults a year, and really splendid specimens of *nemorica* are only to be obtained about March and October.

Both these Mynahs lay in holes of trees at all heights above 20 feet. They, as a rule, select holes which are difficult of access. The eggs are laid on a small pad of grass and leaves, the nest having no defined shape. The only nest of *malabarica* that I have actually taken contained three eggs slightly incubated; this was on the 13th May. They measure $\cdot 86 \times \cdot 7$, $\cdot 8 \times \cdot 7$, and $\cdot 83 \times \cdot 72$. Of *nemorica* I have taken two sets of eggs, one of two eggs fresh, and one of three on the point of being hatched; the former on 12th May, the latter on 6th June. In size the two clutches vary extraordinarily. The first two eggs measure $\cdot 82 \times \cdot 62$ and $\cdot 85 \times \cdot 63$; the second lot measure $1\cdot 01 \times \cdot 7$, $1\cdot 0 \times \cdot 7$, and $1\cdot 0 \times \cdot 7$.

In both species the eggs are very glossy, and the color is the same, *viz.*, an uniform dark greenish blue, of much the same tint as *Acridotheres tristis*. (N. and E., p. 433.)

111.—*Glareola orientalis*, Leach. (842.)

I have found eggs of this species from the 16th April to the 1st May, on which latter date some eggs were fresh, but others much incubated. Three appears to be the maximum number of eggs, but two only are more frequently laid. The eggs are deposited on the bare ground, burnt up sandy paddy fields being much frequented. No great number of birds breed together, nor have I ever found two nests very close to each other. The finding of eggs is consequently very laborious work. When disturbed, the sitting bird flies round one's head for a short time and then goes away. But when the young are lying hid, then the birds display great anxiety, and it is on these occasions that the bird squats on the ground with wings outspread and neck stretched out. I fancy this action is meant to counterfeited lameness, and so draw the intruder off the scent.

The young bird runs as soon as it is hatched. Its colour is a mixed pepper and salt, the black preponderating:

The eggs are undistinguishable in everything but size from those of the Burmese Lapwing. They are quite different from those of *G. lactea*. The ground color is buff or stone color, and the whole shell is thickly blotched with blackish brown, and underlying smears of paler brown sunk into the shell. Other eggs are so thickly blotched as to appear black when viewed at a short distance off. They are without gloss and Plover-like; one end of the egg is much pointed.* In size they vary from 1.25 to 1.12 in length, and from .96 to .9 in breadth, but the average of a considerable series is 1.18 by .93. (N. and E., p. 568.)

112.—*Esacus recurvirostris*, *Cuv.* (558.)

Nest on May 1st with two fresh eggs in fallow land. No details appear to be necessary. (N. and E., p. 579.)

113.—*Leptoptilos giganteus*, *Forst.* (915.)

Along with the Pelicans, breeding in the same trees, were innumerable Adjutants. One can hardly realize the number of these birds that visit Pegu in October, unless, as I have, he has seen the vast armies which settle on the plains on their first arrival. I have stood on a bund where I could see about two miles round me, and the whole area was literally covered with them. Some fifty birds stand huddled together; then there is a bare space of about 100 feet, and then another group of birds. Their numbers are incredible. They all arrive suddenly in the Pegu plain on the same day, and after resting for about two days, they betake themselves to the forest where I had the pleasure of visiting them. Certainly almost all the Indian Adjutants must come to Pegu to breed.

On the same day we took the Pelican's eggs, we also paid attention to the Adjutants, but whereas in the case of the Pelicans by climbing one tree you procure almost as many eggs as you care to have; with the Adjutants it is different. Frequently there is only a solitary nest in a tree, rarely two or three, and in this case the tree selected is a stupendous one, with immense branches reaching 50 feet from the trunk and mostly horizontal. These nests are not to be got at even by

* This is especially noteworthy as showing that, in its eggs, this species diverges widely, not only from *G. lactea*, but from its extremely closely allied congener, *Glaucopis pratensis*, Lin. The eggs of the former fully described, N. and E., 568, are not in the least Plover-like but rather Tern-like, and of the latter Mr. Hewitson says of the egg: "In shape and colour they bear a much closer resemblance to the eggs of the Black Tern, than to those of any other British bird; they are not at all like the pointed eggs of the true Waders." By which he here means to refer to the Plovers, Godwits, Snipes, &c.—A. O. H.

Karens. Fortunately the nests are so frequent that there is no difficulty, in the course of a morning, in finding accessible ones in plenty.

November 11th was a trifle too early. Many nests were still being built; others had no eggs in them, and only a few had the full complement of three eggs.

The nest is made entirely of coarse sticks, and it is of such a size that the sitting bird cannot be seen from below, except when she stretches her head out. It is wedged into a fork as near the exterior of the tree as possible whether at the top or side.

The eggs, three in number, are originally pure white and tolerably, in some specimens very, smooth to the touch. As incubation proceeds the shell gets much stained and becomes a dark earth brown. The interior lining is very dark green. They are very regular ovals, much the same shape at both ends. Size from 3.1 to 2.82 by 2.25 to 2.08.

These Adjutants utter only one sound, and it resembles the lowing of a cow when separated from her calf. It was the only sound heard in these gloomy forests. (N. & E., p. 605.)

114.—*Leptoptilos javanicus*, Horsf. (916).

While taking some nests of *L. giganteus*, I sent some of the party to look for accessible trees. They misunderstood me, and finding a tree which could be climbed, a man ascended and took two eggs, which he brought me as the eggs of the Hair-crested Adjutant. I failed to see any of these birds myself, but they are common enough in the same forest, for subsequently I procured young birds which I am now rearing. I see no reason to doubt the authenticity of the eggs. I was in the forest only one morning, and might easily have failed to notice this species. In fact the Burmans told me it was too early for them, as they breed later than the Pouched Adjutant.

The two eggs measure 3.16 and 2.98 by 2.25 and 2.2, respectively. These dimensions are rather larger than the largest egg of *giganteus* I procured. In color they are precisely the same. This year I hope to get more reliable specimens.

115.—*Xenorhynchus asiaticus*, Lath. (917).

The breeding of this bird is well known. In the Pegu plains they select an isolated tree and make a large nest near the summit. On the 1st December I took two eggs, and on the 6th January a clutch of four. Young birds reared from the nest are now (June) moulting into the adult plumage. (N. & E., p. 607.)

116.—*Ardetta sinensis*, Gm. (934).

Common as this bird is, its nest is one of the most difficult to find, and when found, to secure. It selects the matted leaves of immense reeds, and places its nests on the summit where wind and rain have entangled the leaves and worked them into a platform. The nest itself is a mere pad of dry grass and leaves.

I have only taken one nest, which contained four eggs. They are without gloss and a pale green color. They measure 1.26, 1.31, 1.3, and 1.28 by .95, .95, .97 and .93, respectively. They were found on the 20th August and were fresh. (N. & E., p. 623.)

117.—*Nettapus coromandelianus*, Gm. (951.)

Nest with ten eggs on the 15th September in the hole of a mango tree about 30 feet from the ground. (N. & E., p. 638.)

The Birds of a Drought.

THE general geographical range of any species may be assumed to have been defined, either by physical barriers, past or present, which were impassable to it, such as lofty chains of mountains, seas, &c., or by the pressure of conditions unfavourable to its existence, configurational, climatic, nutritive or competitive.

Under configurational conditions, I include all local terrestrial features. Station implies a combination of such features favourable to the existence of the particular species in question, and an absence of such features is a potential factor in the limitation of range.

Geographical *range* and *station* are often sharply contrasted; *range* is used as expressing the entire area on the world's surface (as determined by a multiplicity of causes) over which the species is spread with more or less continuity; *station* is used to signify the particular local areas (determined by terrestrial features only) which the species affects.

Thus of the Osprey, the *range* would be defined as "the whole of the Old and New Worlds except part of South America," the *station* as "the banks and coasts of more or less considerable aggregations of water, running or standing, fresh or salt, and their immediate neighbourhoods."

All local terrestrial features, not comprehensible in the expression "its *station*," are *primâ facie* "configurational" conditions unfavourable to the existence of the particular species.

Climatic conditions (temperature, rainfall and the like) nutritive conditions, (nature and extent of food supplies, and degrees of facility with which they can be obtained), those latter very often mainly dependent on the former, and competitive conditions (in which I include the absence or presence, not only of races consuming the same food, but also those actively hostile), all combine with configural conditions to determine range.

These different classes of conditions operate with very varying degrees of potentiality where different classes of animated life are concerned; and even in the same class, in the case of different families, and at times even genera.

In tropical and sub-tropical climates, probably no one factor exercises so powerful an influence over the distribution of land birds (as opposed to shore and water birds) as the rainfall. Our rainfall charts have not yet been worked out in sufficient detail to enable me to present the matter in a complete shape, but we have enough data to show to what a remarkable extent the average annual rainfall influences the distribution of a vast number of species.

You find a species plentiful in a certain region, of which the average annual rainfall is, say 100 inches and over; leaving this region the species is perhaps absolutely wanting for a thousand miles, and then you re-enter an iso-ombral* tract and straightway your species re-appears.

Hitherto, while tracts have been classed according to average temperature and half a dozen other averages, very little, if any, attempt has been made, in this country, to class them according to average rainfall, and yet in tropical and sub-tropical regions, at any rate throughout this vast empire, nothing so distinctly governs distribution.

It is customary to talk of the Malayan *faunes*, of the Fauna of the Malabar Coast, the Assamboo Hills and part of Ceylon; what is this but that in these localities you recover the heavy rainfall of the Malay Peninsular? How the same species or representative forms found their way to these distant localities is another question, but their survival in each is due primarily to the extent of the rainfall.

What gives such a plains of India *faunes* to the dry upper portions of Pegu, but the light average rainfall? What allows the Indo-Malayan species to run up westward along the feet of the Himalayas, at any rate as far as the Ganges, but the heavy rainfall?

* ομβρος = rain.

Map the whole country out carefully into iso-ombrie zones and patches, and of a vast number of tropical and sub-tropical species, you can at once map out the exact distribution.

No doubt there are some species, to whom wide variations in rainfall seem to signify nothing, others that an almost total absence of rainfall fails to banish, and it is a matter of much interest to determine which these species and genera are.

During the last cold season I remained for nearly a month at Jodhpoor; and as this place, besides having normally a rainfall of only about 6 inches, had, during the previous 15 months, had no rain at all, only two or three times little attempts at showers insufficient even to lay the dust, it occurred to me that an exact record of the birds actually then present, between January 15th and February 15th, in this rainless and waterless entourage might be both interesting and useful.

Accordingly I collected most carefully. Not only was I out each morning at daylight, searching vigorously for birds for some three hours, but I had out two natives, well trained to the work, shooting all day. I doubt very much if a single species then present within a radius of from eight to ten miles from the town escaped us.

The tract worked was a nearly level semi-desert sandy plain, dotted about at rare intervals, with tiny patches of cultivation, and here and there studded with low hills of bare rock (on one of which Jodhpoor stands) from one to three hundred feet in height. The rest of the plain is more or less thinly covered with stunted or dwarf thorny scrub, interspersed with bare sand, or congeries of wind-waved blown-sand hillocks. In tiny valleys of the rocky hills, a few small artificial tanks still held water, but not a drop of this was to be found elsewhere, and a large proportion of the wells were dry.

If ever there was an unpromising field for an ornithologist it was here; and yet not only were a good many species to be found, but two or three of these, species of some interest.

I will now subjoin a list of the species obtained, with such few remarks as these seem to call for.

2.—*Otogyps calvus*. 5.—*Pseudogyps bengalensis*. 6.—*Neophron ginginianus*. 11.—*Falco jugger*, *rare*. 16.—*Falco chiquera*. 17.—*Cerchneis tinnuncula*, *rare*. 29.—*Aquila vindhiana*. 45.—*Buteo ferox*, *rather scarce*. 56.—*Milvus govinda*. 72.—*Ketupa ceylonensis*, *only one single specimen seen and shot*. 76.—*Athene brama*. 82.—*Hirundo rustica*. 90.—*Ptyonoprogne coucolor*, *rare*. 117.—*Merops viridis*, *scarce*. 129.—*Halcyon smyrnensis*, *very rare; only seen at the little tanks above referred to*. 148.—*Palæornis*

torquatus. 160.—*Picus mahrattensis*. 234.—*Arachnechthra asiatica*, *short billed and green, closely approaching the brevirostris form*. 254.—*Upupa epops*. 256.—*Lanius lahtora*. 277.—*Pericrocotus erythropygius*. 278.—*Buchanga atra*. 292.—*Leucocerca aureola*, *rare*. 436.—*Malacocercus malcolmi*, *very common*. 438.—*Chatorhea caudata*, *do., fairly typical and not approaching huttoni*. 459.—*Otocompsa leucotis*. 462.—*Molpastes hæmorrhous*. 480.—*Thamnobia cambaiensis*, *fairly typical*. 481.—*Pratincola caprata*, *very common*.

485 bis.—*Pratincola macrorhyncha*, *Stol.*

J. A. S. B., XLl., 238, 1872, juv.—S. F., IV, 40, n. DESCR.—S. F., V., 132, 241, 244.

P. rubetraoides, *Jam. Jerd. B. of In., App., 872, 1864, sine descr.*

(*Dresser, B. of Eur., Pt. XXIV., 1873, sine descr.*)

Hume, S. F., V., 240, 1877, DESCR. adult.

P. rubetra? *Hume, Ibis, 1869, 355: 1871, 28.*

P. jamesoni, Hume, S. F., V., 239, 1877.

DISTRIBUTION.—Punjab, (*Gogaon, Umballa, Sirsa, Hansi, Shahpoor*, and probably all western districts); Rajpootana, (*Jodhpoor, Bikanir, Jeysalmir*); Northern Guzerat, Cutch, Sindh (*Thurr and Pakhur districts*, and probably elsewhere.)

This species was extremely abundant in the thin, stunted scrub jungle, that here and there studs the sandy, semi-desert, waterless tracts which occur all round Jodhpoor. I procured a large series, and I satisfied myself beyond a possibility of doubt that Stoliczka's and Jameson's birds pertain to the same species.

It seems highly improbable, and I state the fact with diffidence, but according to my sexing (and I sexed 33 birds), the adult males and females are alike, and constitute *rubetraoides*, while the birds of the year are *macrorhyncha*. All my birds were killed at the end of January and during the first week in February, when the weather was singularly cold, and the generative organs were entirely undeveloped, and in most specimens traceable with great difficulty, and I may be in error. But in my large series I have just as many males as females in both forms, and the close similarity of both sexes was what I had years previously ascertained, to the best of my belief, in the case of the adults (*rubetraoides*) in the Punjab, so that for the present I think we must accept the conclusion that the young of both sexes are alike, and are the birds Stoliczka named *macrorhyncha*, while the adults equally (*at any rate in the cold season*) are alike, and represent *rubetraoides*.

I have pointed out (S. F., V., 239,) how this species differs from the European *rubetra*, and I have very fully described the adults, (S. F., V., 140). I may add the following dimensions recorded in the flesh of five (as they proved on dissection) females, two in the *rubetraoides* and three in the *macrorhyncha* plumage:—

			Date.	Length.	Expanse.	Tail.	Wing.	Tarsus.	B. fr. gape.
♀,	<i>rubetraoides</i>	plu. ...	27-1	5.85	9.4	2.0	3.05	0.9	0.71
♀,	Do.	do. ...	27-1	5.87	9.4	2.05	2.96	0.97	0.66
♀,	<i>macrorhyncha</i> ,	plu... 25-1	5.85	9.1	2.1	2.9	1.05	0.76	
♀,	Do	do. ...	27-1	5.73	9.0	2.1	3.0	1.0	4.68
♀,	Do.	do. ...	27-1	5.9	9.1	2.0	2.9	0.98	0.66

Bills black to brownish black; legs, feet and claws black.

I said (V., 241) that I had no idea what the breeding plumage might be like, and that the birds must breed in Central Asia. I may now mention that two or three of both my males and females have the lower parts of the lores, cheeks, ear-coverts and entire sides of the throat (leaving only a narrow pure white stripe down the centre of the throat) black, the feathers only a little tipped with pale sandy, which doubtless in the breeding season entirely disappears; also that the lesser and median and the secondary greater wing-coverts and the winglet have become nearly black, only very narrowly edged with sandy buff, which colour also seems in the course of disappearing.

Also I may say that I am now by no means sure from further enquiries that this *is* a migratory species. One would naturally suppose it to be so, but natives (who are, however, not to be relied on in regard to any small birds) assured me that they breed in Jodhpoor during the scanty rainy season (only about 4 to 6 inches rainfall) that they have there.

The young are fully described, S. F., 40 n, and I have already (V., 241) clearly pointed out the differences between these and what I now believe to be the adults.

I say, now believe, because I must go by my own specimens, but I may mention that a year ago my friend Mr. Blanford told me that he believed *macrorhyncha* was only the female of *rubetraoides*, and *prima facie* looking to the differences that exist in the two sexes of other species, this would be most probable.

In habits this species does not differ from *P. indica*. I found it always perched on some exposed spray, at or near the top of some stunted, thorny bush. I found nothing but insects recognizable in the stomachs of those I examined, though in several there was nearly digested matter that might have been the pulp of seeds. I never heard it sing or attempt to sing, but it has a little sharp chip chip note, which I now and then caught.

488.—*Saxicola opistholeuca*.

489.—*Saxicola picata*. Not one single specimen of what Blanford and Dresser call *morio*, and what I believe to be a different form, the old adult, of this species. The case is clear, the old birds were not to be caught with chaff; Jodhpoor this year was much too dry and husky for them, though in other years, when such a drought does not prevail, they are not uncommon here.

491.—*Saxicola isabellina*.

491 bis.—*Saxicola chrysopygia*, *De Fil.* ?

S. kingi, *Hume. Ibis*, 1871, 29.—S. F., I., 187.
DESCR.

I have already fully described this species, *loc. cit.*

I very much doubt the correctness of Messrs. Blanford's and Dresser's identification of my bird with De Filippi's.

The latter preserved no specimens, (or these have been lost), and we have only his description to go by, and the fact that *kingi* has been procured in Beloochistan and in Persia, but not as yet in the locality (not since explored), "the highest and most stony parts of the Hills that encircle Demavend," whence De Filippi obtained his *chrysopygia*, is certainly not conclusive as to the identity of the two species.

The following is De Filippi's original description (*Arch. Zool. Genov. II.*, 381, 1863).

DROMOLÆA CHRYSOPYGIA, *De Fil.*

"*Capite, collo, dorso supremo cinereo plumbeis; dorso infimo fuscescente; uropygis tectricibusque caudæ (elongatis) albescenti flavidis, sensim in rubiginoso vertentibus; collo infimo, pectoreque supremo cinerascentibus; cæterum infra sordide alba; crisso lævissime rubiginoso tincto, remigibus fusco-cinereis, secundariis extus rubiginoso marginatis; rectricibus fulvo-rubiginosis, versus apicem nigris, limbo extremo denus rubiginoso.*"

"Il nero sub fondo rossa della coda è esteso per la terza parte delle timoniere laterali, ma nelle due mediane per la metà."

Now to my idea the very first sentence is fatal to the identification. I have a *large* series, and in not one is there a trace of leaden ashy on the upper surface, which is a pale earthy brown; then the rump and upper tail-coverts cannot possibly be designated "whitish yellow gently inclining to ruddy" as they are invariably a bright rufous fawn. Nor are the quills brownish ashy, but deep hair brown, nor are the secondaries ever margined with rufous, nor are the proportions of the black and red of the tail as stated by De Filippi; only about $\frac{1}{4}$ of the lateral

tail feathers at most (in some less) and more than one-half of the median ones, being black in *kingi*.

Of course *chrysopygia* is some bird of this type, but in the absence of any types, the description agrees so ill with *kingi* that I see no fair grounds whatsoever for the identification, and, were the species not my own, should reject De Filippi's name unhesitatingly.

492.—*Saxicola deserti*.

494.—*Cercomela fusca*. 497.—*Ruticilla rufiventris*, *rare*.

550.—*Burnesia gracilis*. 551.—*Franklinia buchanani*; *both these last very common*. 581.—*Sylvia jerdoni*, *rare*.

582.—*Sylvia affinis*. This was excessively common, as was also the very small form that I designated (*S. F., I., 198.*)

583 *ter.*—*Sylvia minula*.

At the time I conferred this name I was disposed to consider it a mere race, but this year, observing it closely, I noticed that its habits were those of *S. nana* rather than of *S. affinis*; that it kept much to the ground, running in and out of the roots of the bushes, like a small sand rat, just as *nana* does. Indeed I was continually shooting it for *nana*, whereas I never shot a single *affinis* by mistake.

Further, close inspection has led me to suspect that it may perhaps be a good species, and in this view Mr. Brooks, who is well known, has paid special attention to this group, and to whom I sent several specimens entirely concurs. He says in *epist.* :—

“Your Little White Throat is neither *affinis* nor *garrula*, but a really good species. Its wing is rounder than either, $2=7$ or $7/8$, against $2=5$ and $2=6$. It is much smaller too, and almost as brown on the back as *delicatula* (*nana*).”

In another letter :

“The Little White Throat is a very good thing, *no race*, but a clearly distinct species. Little bill, pale sandy color, much smaller size and much rounder wing, are differences sufficient to separate any birds of this group.”

To this I must add difference of habits, in which it coincides with *nana* and not with *affinis*, and a difference in distribution, it being, I believe, entirely confined to the desert country—Sindh, Bhawalpur, and Western Rajpootana.

But it is not to be disputed that great practical difficulties exist in separating in the cabinet, specimens of the different races or species of White Throats that occur in India. When a really large series, such as our Museum contains, is got together and carefully compared, one generally comes to the conclusion that it is impossible to separate these races. This was the

conclusion I came to S. F., I., 198, where I fully characterized the three races. Yet formerly in the field, and again this year observing them alive and free, I was fully impressed with their distinctness. Now again reviewing only specimens, I find many of my old difficulties arise.

So far as one can see, the birds do not associate; their habits are recognizably distinct; typical specimens of each are equally recognizably distinct, but when one overhauls a hundred or so, a certain number, small it is true, but still an appreciable proportion of the whole, appear, which, in one way or another, connect together, so far as color, size, and proportions of the primaries go, the three supposed species.

Mr. Brooks remarks on *Sylvia affinis* and *curruca* (S. F., II., 332; III., 272), and Captain Butler's (S. F., III., 487) will be remembered and referred to.

Mr. Dresser's article on *S. curruca*, Birds of Europe, Pts. 47 and 48, March 1876, p. 4, should also be consulted.

Mr. Brooks pointed out, *loc. cit. sup.*, that our Indian White Throats differed from the European *Sylvia curruca* in the shape of the wing. The 2nd primary being in the European bird equal to the 5th or 4/5th or 4th, whereas in the Indian bird the 2nd primary is never longer than the 6th. Now I consider that this point, first noticed by Mr. Brooks, is a good and constant point of difference. I have nine English specimens of *S. curruca* before me; in seven of these the 2nd equals the 5th, in one it is intermediate between the 4th and 5th, and in one it is intermediate between the 5th and 6th, but nearer the 5th.

I have also before me one hundred and sixteen perfect winged (I omit those that are imperfect) Indian White Throats, and in not one single specimen is the 2nd primary longer than the 6th.

I think it is, therefore, allowable on the strength of this apparently perfectly constant difference in the wing formula to assume that the European and Indian White Throats are distinct.

Reverting now to my original remarks on this group (S. F., I., 197,) I still find, as I then did, that there are three recognizable races in India, but whereas I called the 2nd or intermediate sized race, *curruca*. Mr. Brooks has shown by an examination of the type that this is really Blyth's *affinis*, and the third and largest race remains as yet without any distinctive appellation.

Now these three races are as follows:—

First.—A very large species with the wings in the males running to 2·8, with scarcely, comparatively speaking, any brown upon the back; everywhere a leaden-greyer bird than either of the other two.

This is clearly a rare bird. I have only five specimens, as follow :—

Jhansi,	male;	wing 2·8; 2nd primary nearly equals	8th.
Deesa,	male;	wing 2·78; 2nd " "	7th.
Ahmednuggur,	male;	wing 2·79; 2nd primary intermediate " between 6th & 7th.	
Bhawulpur,	female;	wing 2·7; 2nd " "	6th & 7th.
Ramoo Cashmeer,	male;	wing 2·8; 2nd " "	6th & 7th.

I think that any one studying a large series carefully would have no difficulty and feel no hesitation in picking out the birds belonging to this race, in which, although there is no constancy in the wing formula, the large size and difference in color very readily distinguishes it.

With only a few specimens before me I should not have felt any such certainty, but with 116 good specimens, all carefully measured and examined, I do feel that the bird must be accepted, at any rate, as a clearly recognizable race. The difference is greater than in the case of many *Phylloscopi* admitted as distinct species. Those who do not admit *races* may call this bird *Sylvia althæa*.

Second.—We have the ordinary Indian race which, during the cold season, is spread over the entire empire, and which a comparison of the types proves to be *S. affinis*, Blyth.

In this species the back is much more decidedly brown than in the preceding species; it is also smaller, and while it has a decidedly larger and stouter bill than the English *curruca*, it has at the same time a decidedly smaller one than *althæa*.

In this species the wings, as a rule, vary from 2·45 to 2·65; out of ninety-three specimens only three have the wings smaller than 2·45, and only two have them larger than 2·65.

The wing formula is not absolutely constant; of the ninety-three, sixty-two have the 2nd primary equal to the 6th, twenty-five have it intermediate between the 6th and 7th, five have it equal to the 7th, and one has it intermediate between the 7th and 8th. It may be useful here to give a list of all these specimens, showing the localities where they were procured, the sex, where this has been noted, and the length of the wing :—

2nd primary equals 6th (62 specimens.)

Etawah ...	... Male	2·5	Mogulserai ...	... Male	2·56
Saunthur ...	... Female	2·5	Jodhpur ...	... "	2·6
Etawah ...	... ?	2·6	Delhi ...	... "	2·45
Etawah ...	... Male	2·5	Cawnpur ...	... ?	2·53
Cawnpur ...	... ?	2·49	Ajmeer ...	... Male	2·53
Oodeypur ...	... Female	2·55	Soojat ...	... "	2·49
Delhi ...	... "	2·58	Lahore ...	... ?	2·46
Allahabad ...	... Male	2·6	Kussowli ...	... Male	2·52
Beaur ...	... "	2·7	Lahore ...	... "	2·55
Umbhalla ...	... "	2·65	Lahore ...	... ?	2·61

Dinapur ...	... Female	2 55	Dinapur ...	... ?	2 55
Dinapur ...	... "	2 45	Dinapur ...	... Male	2 6
Dinapur ...	... ?	2 6	Dinapur ...	... Female	2 6
Ahrowra ...	... ?	2 6	Dinapur ...	... "	2 6
Etawah ...	... ?	2 5	Deesa ...	... "	2 66
Mogulserai ...	... Male	2 65	Roorsee ...	... ?	2 5
Sukkur ...	... Female	2 6	Buxar ...	... Female	2 45
Aboo ...	... ?	2 56	Dinapur ...	... "	2 6
Sambhur ...	... Female	2 45	Mithencote ...	... "	2 6
Bhawulpur ...	... ?	2 71	Saugor ...	... ?	2 5
Ramoo, Cashmeer ...	... Male	2 68	Saugor ...	... Male	2 5
Dinapur ...	... Female	2 48	Etawah ...	... ?	2 46
Dinapur ...	... Male	2 55	Etawah ...	... Female	2 45
Jhansie ...	... ?	2 52	Dinapur ...	... "	2 5
Mithencote ...	... Female	2 51	Jhansie ...	... Male	2 5
Erinpoora ...	... Male	2 65	Buxar ...	... Female	2 51
Bhawulpur ...	... Female	2 55	Jhansie ...	... ?	2 4
Sambhur ...	... Male	2 65	Nal, Khelat ...	... ?	2 62
Mooltan ...	... "	2 61	Nal, Khelat ...	... ?	2 48
Dinapur ...	... "	2 6	Jhansie ...	... Female	2 49
Dinapur ...	... Female	2 53	Dinapur ...	... Male	2 56

2nd primary intermediate between 6th and 7th (25 specimens.)

Dinapur ...	... Male	2 55	Etawah ...	... Female	2 46
Sambhur ...	... Female	2 6	Jodhpur ...	... "	2 41
Dinapur ...	... Male	2 49	Jodhpur ...	... ?	2 63
Delhi ...	... Female	2 6	Etawah ...	... Male	2 5
Etawah ...	... "	2 5	Allahabad ...	... ?	2 63
Dinapur ...	... "	2 51	Umballa ...	... Female	2 55
Sambhur ...	... "	2 45	Ahrowra ...	... ?	2 5
Umballa ...	... Male	2 6	Ahrowra ...	... Female	2 5
Mogulserai ...	... "	2 55	Allahabad ...	... Male	2 5
Delhi ...	... "	2 45	Dinapur ...	... Female	2 36
Umballa ...	... Female	2 6	Ahrowra ...	... "	2 59
Mogulserai ...	... Male	2 59	Jodhpur ...	... Male	2 5
Delhi ...	... Female	2 6			

2nd primary equals 7th (5 specimens.)

Rasmalan, Mekran Coast	?	2 55	Ajmeer ...	...	?	2 52
Nagpur ...	?	2 55	Coimbatore	...	?	2 6
Dinapur ...	... Male	2 51				

2nd primary intermediate between 7th and 8th (1 specimen.)

Jodhpur, Male, 2 55.

As regards this species I have to notice that there is a marked variation in the color of the lores and ear-coverts. In some specimens these are barely darker than the nape; in others they are almost black. This difference is not apparently due to either sex or season, as I have specimens of both sexes with the dark lores and ear-coverts, and also with the pale ones, killed in October, November, December, January, February, March, and April; it is either an individual peculiarity, or it may be dependant on the age of the bird.

This.—We have the small desert race which I designated *minula* with a pale blue grey crown, and with the whole

mantle a pale sandy brown, much paler than in *affinis*, almost the same as in *nana*.

In this species only two out of seventeen specimens have the wings over 2.45. The majority run under 2.4. Of seventeen specimens, thirteen have the wings 2=7; three have the 2nd intermediate between 7th and 8th; one has the 2=8.

This species is, I find on careful re-examination of my whole collection, confined entirely to the extreme western portions of the Continent. I said formerly (S. F., I., 198) that I had a specimen from Jhansie, but on re-examining it I find that it was not correctly assigned to this race. I give below a list of my specimens similar to that already given for those of *affinis*:—

2nd primary equals 7th (13 specimens.)

Jodhpur ...	...	?	2.4	Chenab and Ravee Junct. <i>Female</i>	2.36
Jodhpur ...	...	?	2.35	Bhawulpur ...	2.46
Mooltan ...	...	<i>Male</i>	2.35	Chenab and Ravee Junct. <i>Male</i>	2.33
Jacobabad ...	...	?	2.44	Bhawulpur ...	?
Jacobabad ...	...	<i>Female</i>	2.35	Bhawulpur ...	?
Sukkur ..	...	"	2.3	Ravee and Chenab Junct. <i>Male</i>	2.4
Mithencote	...	"	2.35		

2nd primary intermediate between 7th and 8th (3 specimens.)

Jodhpur	...	<i>Male</i>	2.43	Jodhpur ...	...	<i>Male</i>	2.53
Jodhpur	...	<i>Female</i>	2.31				

2nd primary equals 8th (1 specimen.)

Ferozpur, *Male*, 2.5.

Although there will, doubtless, be some few exceptions, the following rough diagnosis will suffice to enable observers to separate the great majority of the specimens they may meet with:—

S. ALTHEA.

S. AFFINIS.

S. MINULA.

Upper surface darkish grey; slightly tinged with brown on the back.	Crown brownish grey; mantle earth brown.	Crown pale bluish grey; mantle pale sandy brown.
Wing, 2.7 to 2.8	Wing, 2.45 to 2.35.	Wing, 2.3 to 2.45.
2nd primary=6.7, 7, 7.8.	2nd Primary=6, 6.7.	2nd Primary=7, 7.8.

Individual specimens will undoubtedly occur, which will not in *every* respect fall within the lines of this diagnosis; and it is this which has made me doubt whether these three forms should be considered races or species; but the very great majority of the specimens can be at once diagnosed as above, and in all I think two out of the three points will be found to hold good.

I have endeavoured now to lay the matter fully before my readers; it is right, and indeed necessary, that they should understand and recognize the existence of these three forms, but

whether they shall accept them as mere races of one species, or as three distinct species, is a matter for each one to decide for himself. That they are all three invariably distinguishable from *curruca*, of Europe, by the proportions of the primaries I hold to be pretty well established.

583 *bis*.—*Sylvia nana* ; extremely abundant in the low scrub.
591.—*Motacilla dukhunensis*. 602.—*Anthus campestris*.

657.—*Corvus laurencei*, *Hume*.

This Raven swarms about Jodhpoor. Our camp was a large one, perhaps containing 1,000 souls, and in amongst the tents, from dawn till dark, familiar and fearless as sparrows, were at all times from 50 to 100 of these ravens, stalking about singly and croaking vigorously to each other.

It may be my ignorance, but I cannot help considering this Raven distinct from *corax* of Europe, of which I kept two as a boy, and with which I have been very familiar.

In the first place, the note is decidedly different, less hoarse, less deep, less unmusical.

In the second place, the colour of the sheen is different, and there is a purplish tinge on the throat and upper breast hackles in fine specimens, of which I find no trace in skins of *corax*.

In the third place, the bird is only about half the bulk, it seems to me, and very differently shaped.

The very largest male that I have ever met with measured only 21.75 inches long ; old males average 24.0 ; females, 23.0. The heaviest bird out of some fifty that I have weighed at different times only weighed 2lbs. 5oz. ; 2lbs. to 2lbs. 2oz. is the weight for fine males ; 1.12oz. to 1.14oz. for females.

Then the wings are excessively long for the size of the bird, and vary from 16.3 in the smallest female measured (but only good adults were measured) to 17.4 in the largest male.

The wings in the fresh bird reach, as a rule, when closed, *quite* to the end of the tail ; in no case have I found them fall more than 0.5 short of this.

The tail is very much rounded, the outer tail feathers are always 2 and occasionally fully 2.5 inches shorter than the central ones.

I have unfortunately no sufficient series of European specimens to compare, but I shot and preserved a dozen of *this* supposed species at Jodhpoor, which I shall send home for comparison there.

Our bird I may note is a permanent resident in the N. W. Punjaub, &c., and breeds there freely. (See Nest and Eggs, Rough Draft, 408.)

It has been suggested that my bird might be *umbrinus*, but considering that the adult has no brown about it, (of course the

young have the wings and tail brown) and looking to the dimensions of the wing above given (that of *umbrinus* varies from 14·2 to 15·7), I think it needless to discuss this hypothesis, the more so that I have one specimen of the true *umbrinus* from Jacobabad, Sindh, (in regard to which *vide infra*, my notes to Mr. Murray's paper) which is as different from the present species as any Crow can be.

662.—*Corvus splendens*, *rare*. 684.—*Acridotheres tristis*. 706.—*Passer domesticus*. 716 *bis*.—*Emberiza striolata*, *on the flanks of the rocky hills only*.

732 *bis*.—*Bucanetes githagineus*, *Licht*.

Jodhpoor is the most eastern locality from which this species has as yet been obtained. Westwards of this it occurs in Jesulmir, as well as in Sindh. At Jodhpoor it was very rare, and I only saw and shot a single male, and though my men hunted hard, being very indignant at my getting a species that they did *not* get, they never succeeded in securing one.

760 *bis*.—*Pyrrhulauda melanauchen*, *Cab*.

Mus. Hein, I., 124, 1851.—*Finsch*, Tr. Z. S., VII., 275, pl. XXV., 1869—*Hartl. and Finsch*, Vög. Ost. Afr. 469, 1870.—*Blanf.* Ibis, 1873, 223.

crucigera, *Rüpp.* Syst. Uebers., 79, No. 313, 1845, (*in p.*) *nec Tem.*

nigriceps, *Heugl.* Fawn. Roth. Meer. No. 185, 1861, *nec Gould*.

affinis, *Blyth*, Ibis, 1867, 185. *Hume*, S. F., I., 212, 1873.

I formerly, *loc. cit. supra*, indicated the more conspicuous differences between this species and the common Indian *P. grisea*, Scop., but I had not at that time seen the female of the present species, nor was I aware of the extent to which the plumage of apparently adult males differs.

The following are dimensions recorded in the flesh of several specimens, males and females :—

Sex.	Length.	Expanse.	Tail.	Wing.	Tarsus.	Bill from gape.	Culmen.
♂	5·61	10·1	2·2	3·2	0·6	0·5	0·55
♂	5·6	10·0	2·2	3·17	0·7	0·47	0·56
♂	5·4	9·85	2·0	3·14	0·7	0·43	0·53
♂	5·5	10·5	2·2	3·3	0·65	0·47	0·52
♂	5·55	10·3	2·3	3·3	0·68	0·47	0·5
♀	5·4	10·0	2·0	3·11	0·69	0·48	0·52
♀	5·3	9·6	2·1	3·02	0·7	0·49	0·52
♀	5·23	9·7	2·0	3·03	0·63	0·45	0·51
♀	5·55	10·1	2·1	3·2	0·7	0·5	0·5

The irides were brown; the bill varied from pale whitey brown, bluish on lower mandible, to pearly white with a bluish

tinge; the legs and feet were pale whitey brown, pale hoary fleshy, or pale brownish fleshy.

The male has a broad frontal band, cheeks, ear-coverts and a band from these round the base of the occiput, and a large patch on either side of the breast, white, in the case of the two latter often tinged brownish.

The base of the lower mandible, chin, throat, central portion of breast, abdomen, vent and lower tail-coverts, axillaries and wing-lining, (except lower primary greater coverts, which are pale grey brown like the lower surface of the quills) intensely deep, at times somewhat sooty, at times almost chocolate brown; the crown and upper part of occiput are deep brown, never, I think, quite so intense as the lower parts, often considerably lighter and more purely brown; the anterior portion of the sides of the neck, behind the lower half of the ear-coverts, is always like the breast. Sometimes the deep colour of these parts extends behind the whole of the ear-coverts, and right round the back of the neck, forming a collar immediately behind the white basal occipital band, already noticed. Sometimes there is not the faintest trace of this, and sometimes again the collar is only represented by a larger or smaller nuchal patch. This is perhaps the most common form, and hence the name "*melanauchen*."

The interscapular region is a pale earthy brown, sometimes with a sandy tinge. The wings rather darker, but all the feathers margined with a pale whitey brown; and inner webs of quills darker, a sort of pale hair brown; central tail feathers slightly paler than tertiaries; rest of tail-feathers deep brown, but the outer web of the exterior feather white or nearly so, and the inner half or more of the inner web, pale whitey brown; rump and upper tail-coverts pale earthy or sandy brown, noticeably paler than the interscapular region; flanks much the same colour as the rump.

The female has the chin, throat, abdomen, vent and lower tail-coverts white, with more or less traces of a very faint fawny tinge; a broad ill-defined, pale fawny band, which is sometimes feebly striated darker, covers the breast. The axillaries and lesser lower coverts about the ulna are deep brown, sometimes almost as deep as on the breast of the male.

The female wants the white frontal band and patch on the sides of the head, the white occipital band, the dark crown and dark sides of the neck, and of course the dark collar, or dark nuchal patch so common in the males; the whole top of the head is unicolorous or nearly so with the interscapular region, though the feathers are generally feebly darker centred.

The rest of the upper surface is much as in the male, but as a rule sandier and less earthy in tinge.

The males are distinguished at once from those of *grisea* by their dark crowns.

Both sexes are distinguished by their somewhat larger size, (wings in *grisea* taken at random measure:—

Males.—3·08; 3·07; 3·0; 3·01; 3·1.

Females.—2·99; 3·0; 2·9; 2·99; 3·06; 2·9; 2·87; 2·95) and their somewhat larger bills.

The females are further distinguishable by their whiter under surface, paler upper surface, and especially crowns, and by their deep colored axillaries, which in *grisea* are little darker than the breast. In this latter species the lesser lower-coverts about the *ulna* are dark brown in the female, but not nearly so deep as in *melanauchen*.

I found this species extremely common in the sandy wastes about Jodhpoor. Their habits are precisely those of their common Indian congener. Mr. Blanford found this common about the extreme south-west corner of Sindh near the Hubb River, but I never saw it in Sindh (though I found *grisea* common), and Captain Butler, who like myself has seen plenty of this latter, has not yet succeeded in meeting with *melanauchen* in Sindh.

This species extends into Jeyzulmir, but it does not appear to cross the Aravallis, southwards into Oodeypoor. At any rate I saw none there, but plenty of *grisea* directly we approached the less desert tracts that fringe the Aravallis, whereas whilst I was *there*, I saw no *grisea* about Jodhpoor, only *melanauchen*. This was probably due to the drought, for Dr. King, who collected about Jodhpoor for two years, got no *melanauchen* but sent me specimens of *grisea* thence.

Occasionally this species strays much further east, as our museum contains a specimen shot in the Muttra District by Mr. Adam.

761.—*Calendrella brachydactyla*. 769.—*Galerida cristata*, both very common.

788.—*Columba intermedia*; very scarce, although in Jodhpoor as elsewhere in Rajpootana never allowed to be killed by *any* one, Europeans or Natives. In ordinary years they are said to be more common.

794.—*Turtur senegalensis*. 796.—*Turtur risorius*, both rather rare.

799.—*Pterocles arenarius*. 802.—*Pterocles exustus*. Only one or two of each seen, though further away from Jodhpoor where there *was* a little water, both species were numerous.

803.—*Pavo cristatus*.—Like the blue pigeon this species is sacred in Rajpootana and never shot, and in some parts it swarms to a degree almost incredible. Here, despite of drought and famine, a few were still to be seen.

822.—*Ortygornis ponticeriana*. 837.—*Houbara macqueeni*; very scarce. 840.—*Cursorius coromandelicus*. 840 bis.—*Cursorius gallicus*; a few of each.

To these I must add one species, which, although a shore bird, deserves special mention.

About every hamlet one or more pairs of 855.—*Lobivanellus indicus* were to be observed. In normal seasons there is outside each village one or more tiny ponds, at which the cattle drink, and it is on the banks of these that *L. indicus* is then as a rule to be found. But at the time I refer to, not one of these contained, or had contained for the last nine months, one drop of water.

Strange to say the Lapwings had taken up their quarters like the mad men of old (and mad they must have been to cling to such a place as Jodhpoor was when I was there); "amongst the tombs." Outside each village is a bovine Golgotha to which all the carcasses of the cattle that die are, after being skinned, dragged, firstly apparently to ensure a pleasant smell (from a native point of view) in the suburbs, and, secondly, for the delectation of the village dogs, the jackals and vultures. Now at this time of drought it was invariably amongst the skeletons, generally inside the ribs of some hapless and recently deceased bullock, that I found *L. indicus*, (a veritable disgrace, as I remarked to several of them, to their genus) feeding on fly maggots, and small fragments of putrid flesh.

Of shore and water birds we procured the following at the small tanks and reservoirs above alluded to:—

848.—*Ægialitis cantianus*. 849.—*Ægialitis curonius*. 871.—*Gallinago scolopacinus*. 884.—*Tringa minuta*. 894.—*Totanus glottis*. 897.—*Totanus calidris*. 898.—*Himantopus candidus*. 899.—*Recurvirostra avocetta*. 903.—*Fulica atra*. 917.—*Xenorhynchus asiaticus*. 923.—*Ardea cinerea*. 930.—*Ardeola grayi*; 937.—*Platalea leucorodia*. 957.—*Spatula clypeata*. 958.—*Anas boschas*. 959.—*Anas pæcilorhyncha*. 961.—*Chaulelasmus streperus*. 964.—*Querquedula crecca*. 967.—*Fuligula rufina*. 975.—*Podiceps minor*. 1,005.—*Phalacrocorax carbo*.

Now, of course, this must not be supposed to exhaust the avifauna of the environs of Jodhpoor, in ordinary years, but it does, I believe, absolutely exhaust the avifauna of the 250 to 260 square miles of country that we worked, at this particular season of drought, and I may add that, from what I saw in

marching about elsewhere, there were several thousand square miles of Western Rajpootana, which at that time would scarcely have exhibited from end to end a dozen more species than those that I have above enumerated, altogether 81 in number. Any one who will compare this list with our list of the birds of Mount Aboo, Northern Guzerat and adjacent territories, (Vol. III, pp. 437-500, and Vol. IV, pp. 1-40), will see at once how large a number of species had been banished by the drought.

A. O. H.

A Contribution to the Avifauna of the Deccan.

BY MESSRS. DAVIDSON, C.S., AND WENDEN, C.E.

THIS Paper is offered as a supplement to the "List of Birds collected in the vicinity of Khandalla, &c., &c.," by the Rev. Mr. Fairbank, and which appears in Vol. IV., STRAY FEATHERS.

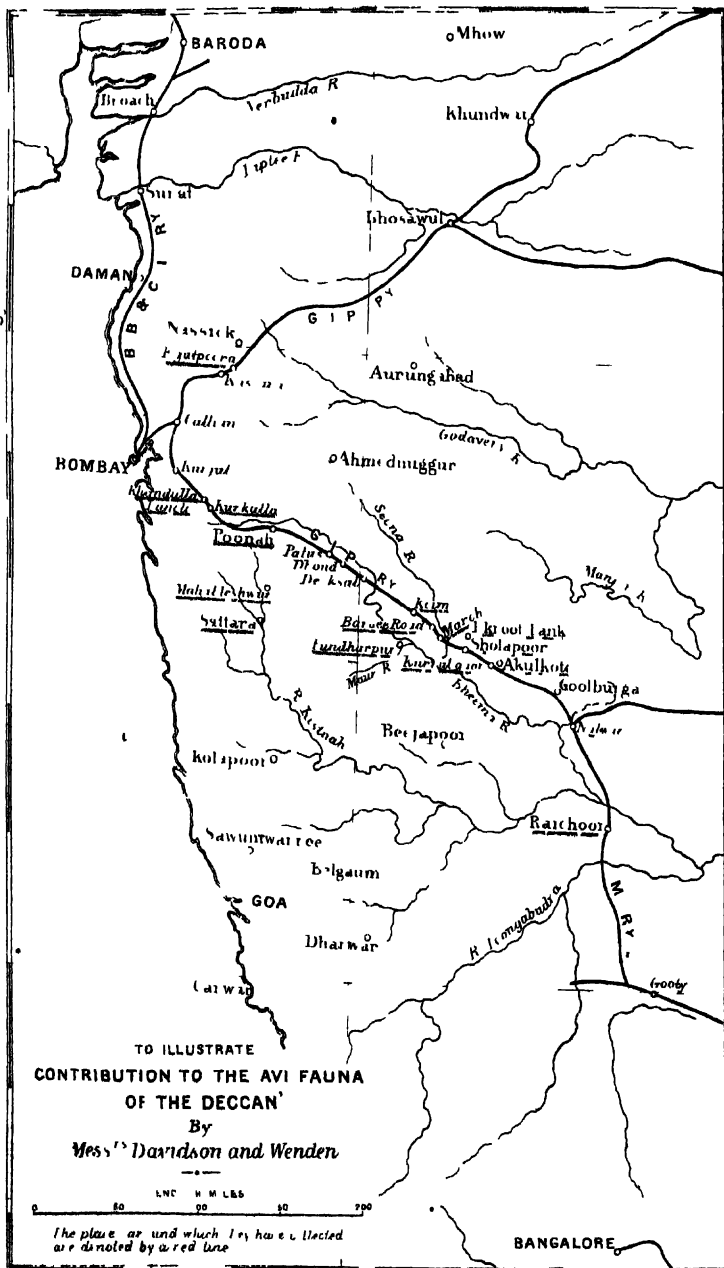
With this list of 255 species, the 103 which Mr. Fairbank notes and we omit, and the additional three observed by Captain Butler, the Avifauna of "the Deccan" is so far represented by 361 species. We note 44 species, which Mr. Fairbank does not.

Our list includes only those species which we have observed along or above the crests of the Syhadree Ghâts, and it has no pretence to represent any very deep research, but is simply a compilation of notes made by us at a time when we had no notion of publishing the result of our observations.

We have been at some pains to render our list reliable, entering no birds about which we have doubt, excepting in cases where the admission is made or implied.

The accompanying map will show that our tract of observation has been somewhat extended. It may be said to embrace the whole valley of the Bheema which, practically, runs for its entire course parallel to the south-east branch of the G. I. P. Railway. Indeed it is along this tract that the authors have chiefly worked, and their observations at Egutpoora, Khandalla, and Mahableshwar may be termed casual.

Egutpoora on the Thull Ghât, and Khandalla on the Bhoze Ghât, may be described in almost the same words. They are both situated on the crest of the ghâts. The temperature is similar, ranging from a minimum of about 56° to a maximum of about 96°. They are both within the influence of the sea breeze, and the rainfall is very heavy, averaging for the four months, June to September, 155 inches at Khandalla, which is 1,793 feet above



the sea, and 129 inches at Egutpoora, which has an elevation of 1,921 feet.

The scenery is grand. The hills are bold, castellated masses of Basaltic trap, numerous scarfed in wonderfully horizontal lines, the slopes between the escarpments, the tops and the bases, being densely clad with trees and undergrowth. The valleys and gorges are rugged, deep and gloomily silent, except for the sweet voices of the birds and the occasional music of some mimic waterfall or the rippling of some stream—perfect paradises for birds—(this from a “summer” point of view of course !)

Two miles up from Khandalla stands Lanoli, the head of the Bhore Ghât incline. Thence the line passes through a tolerably level valley, and the hills on either side gradually diminishing become more and more bare until Poona is reached, and the characteristic type of Deccan scenery commences.

Poona, 1,819 feet above the sea, has a rainfall averaging about 27 inches in the year, and taking the register of 5 years, the maximum temperature has not exceeded 96°, whilst the minimum is 60.°

Just about the city and the cantonment, there are fine groves of trees and verdant patches of garden land, which the fine canal from Kurrukwasla Reservoir, 12 miles from the town, bids fair to increase.

From Poona onwards, along the line of rail to Goolburga 1,492 feet above the sea, the country is parched and barren, with scarcely a trace of vegetation, excepting near villages where good wells exist, or on the banks of rivers. It is a succession of undulations—dreary, low, stony hills or ridges capped with boulders of trap, hidden in yellow spear-grass, and here and there a hollow or slope of rich black soil in which the sturdy, stolid, Mahratta ryots carry on a scanty cultivation.

In the neighbourhood of villages, mangoe topes and gardens are to be found, which afford shelter to our feathered friends, and Peepuls and Bauyans, which form the invariable accompaniment to Hindoo temples, with an occasional Neem, are not absent, while in favoured parts the banks of nullas are fringed with thick groves of Babul and date palms; but, with these exceptions, the region is treeless, whether we look to the low-lying fields, the gravelly sea above, or the rough, barren ridges which crown all.

It is written in one of the Revenue Commissioner's reports that it was “proposed to grant remission of rent, &c., according to the number of healthy trees reared by a cultivator on the boundaries of his fields, but the ryots would not do it on account of the shade being injurious to the crops and the trees attracting birds !”

Leaving Goolburga (where there is a magnificent old fort, on one of the bastions of which is mounted a huge pivot cannon, 29 feet 10 inches long, and where there are some curious old domed tombs), a few miles, and the geological features change. Sudden as the passing from day to night in this country, where we miss our sweet English twilight, is the change from the round weather-worn trap boulders of dark dingy hue to the pearl grey limestone which shows above the surface at eccentric angles—here, level as a billiard table in layers so true that immense blocks or thin slabs with perfectly paralalled beds can be procured without difficulty—there, heaved up, with the seams pointing to the sky, rugged, fractured and distorted. But the general aspect of the country remains unchanged. The monotonous undulations still depress one, the absence of trees is still conspicuous, and the want of cultivation is still more marked than in the country we have already passed through. No irrigation, no gardens.

The only improvement that strikes a passing observer is in the village huts, which, being built of and roofed with the delicate-coloured limestone, look clean and glistening—an illusion soon dissipated on a closer examination.

Here, as indeed all along the route from Poona, almost every village shows traces of fortification, sometimes in a fair state of preservation, but oftener in ruins. Numerous prettily-shaped Martello towers are observed, and every village except the quite modern ones has a dense belt of prickly pear surrounding it; their defence against the hordes of horsemen that perpetually surged through these districts, overwhelming them in a sea of anarchy and desolation until the strong hand of the British Government established peace and order.

Yet a little further on, just 18 miles through the limestone basin, and another change occurs equally suddenly. The whole surface is one continuous plain, more thickly cultivated and with a regular fall towards the Kistna River, into which flows the Bheema with which we have been marching. Before reaching Nulwar, 1,325 feet above the sea, the limestone disappears, and the whole plain is studded with granite hills of the most abrupt and grotesque forms.

East of the line, abreast of the village of Nulwar, commences a continuous range, extending in a south-easterly direction to beyond Koilconda, whilst isolated hills are seen right and left of the line as far as Raichore, feet above the sea, the most southern limit of our range of observation.

Such rugged, wild-looking hills! as though gigantic devils had amused themselves by pitching up heaps of immense blocks, haphazard. Stones balanced one upon the other in the most

delicate manner, others packed as closely and nicely, as if some tidy neat sort of devil had attempted to pack them in the smallest possible space!

These rugged masses are all more or less covered with scrub jungle, whilst the valleys are tolerably well wooded and watered, and we are convinced that a more thorough search through this range would add largely to our list of birds. The jungles contain a few tigers and bears, numerous panthers and a sprinkling of sambur and cheetah, and on the plains we have seen a few herds of black buck and chinkara. But it is heart-breaking work hunting them; brui and his feline friends are pretty secure in the thousands of dens, afforded by the tossed-up granite, and the deer tribe is scarce at the best.

The temperature increases as we leave Poona, journeying south until it is as hot at Raichore as in the central Provinces, without the advantage of any bracing cold season. The rainfall varies but little between Poona and Raichore. The average fall for a period of 8 years was as follows:—

Barsi	...	...	...	25·62.
Mareh	...	...	...	20·47.
Sholapoor	...	...	...	23·49.
Pundharpur	...	...	...	17·86.

Beyond Sholapoor, we have no records, but experience teaches us that the fall between that station and Raichore ranges between 20 and 25 inches. At Indapur, a taluka in the Sholapoor Collectorate, the average for 7 years, from 1866 to 1872 is given as 16·59", but for five years, 1862 to 1867, the average is said to have been only 5·85". Where, in our list we have used the term collectorate, we allude to Sholapoor. The taluka of Sholapoor does not deserve any very special mention. Its general appearance is similar to that which we have endeavoured to describe as existing between Poona and Goolburga. The Revenue Commissioner's report says of this taluka: "Its chief feature is the Ekrook Tank, formed by damming up a valley three miles north of the city of Sholapoor. Three aqueducts sally forth from this magnificent reservoir, carrying prosperity to the more enlightened of the cultivators who, leaving the groove of their forefathers, pay for water wherewith to irrigate their fields." Next to the fact that their fathers had not used water, their greatest objection to it is that it is too cold! Then in the station of Sholapoor itself there are two fine tanks which seldom or ever dry up. One under the walls of the noble old fort, and one in "camp," and there is the Motee Bâgh, a perfect oasis in the desert, with a magnificent grove of trees, its "Lily Tank" and a nullah which flows during the hottest seasons. It was in this place that we collected some of our rarest migrants.

Altogether, the country between Poona and Raichore is not prepossessing. Our sketch is meant to represent its appearances during the hot season when the whole surface is exposed and bare; but, under the most favorable aspects, when every available spot is under cultivation, it is not much more pleasing for what landscape can please one if it be devoid of foliage or water?

The unirrigated crops are either "khurreef" or "rubbee" accordingly as the season is an early or late one. They consist of Bajra, Jowar, Gram, Toor, Wheat, Koorasnee Oorud, Moong, &c., and in the vicinity of Sholapoor, Akulkote, Nulwar and Raichore, a fair amount of rice is cultivated.

The tract is not calculated to possess a very large Avifauna.

Mahableshwar, 4,700 feet above the sea, possesses a cool climate and the rainfall is excessively heavy.

The ground over which Davidson alone collected, in the Satara districts, extended from the valley of the Kistna to the crest of the ghâts. In the station of Satara the mean temperature for 6 years between 1871 and 1876, ranged between 86°6 and 68°9. We have no record of the rainfall.

We are indebted to Mr. H. E. M. James for much of the information which is embodied in this very feeble description of our tract of observation, and to the editor for entirely revising our nomenclature, which, having no works but Jerdon's at hand to consult, was to a great extent, we fear, obsolete.

2.—*Otogyps calvus*, Scop.

Nest with one egg found by D. in Sholapoor Districts, 26th December 1874, and another with a single egg on 28th February 1875. We saw numbers in the interval. Some nests near villages were in high trees, and others, far away from habitations, were in much smaller trees.

4.—*Gyps indicus*, Scop. ? *G. pallescens*, Hume.

At all seasons moderately common in the Sholapoor Districts. It breeds on some of the Satara cliffs in Tadli, and also in the valley of the Sina at Naywi.

5.—*Gyps bengalensis*, Gmel.

The commonest Vulture at all seasons. D. got its nest with a young bird, just able to fly, in the Satara District, early in January.

6.—*Neophron ginginianus*, Lath.

Very common. They lay from beginning of February to the end of March, the majority laying only one egg; but, we have found them with two.

9.—*Falco peregrinator*, Sund.

D. daily saw a pair chasing one another near Adul, on the Khoinoor River, Satara Districts.

11.—*Falco juggur*, Gray.

Very common in the dry districts.

Found our first nest with one fresh egg on 4th January, and our last, with three almost fresh eggs, on 14th March.

On the last nest, built in a Neem tree, about 12 feet from the ground the male bird was sitting, while the female was perched on another tree a hundred yards away.

16.—*Falco chicquera*, Daud.

Very common, breeding abundantly all over the districts. First nest observed on 28th February, and the last 28th March. Four nests, each contained three fresh eggs. Some birds certainly breed prior to the first date.

17.—*Cerchneis tinnuncula*, Lin.

Common throughout the district in the cold weather, and D. thinks it breeds at Mahableshwar.

18.—*Cerchneis naumanni*,* Fleish.

Common in the cold season. D. one evening, on 4th January, in the Sholapoor District, saw a flock of several hundreds roosting on about twenty big trees near a village. He did not shoot a bird, but he has no doubt that it was this species. In the middle of May it was apparently breeding, i.e., it was "calling" at the Genna Falls and Arthur's Seat, at Mahableshwar.

23.—*Astur badius*, Gmel.

Common at all seasons. Nest with two fresh eggs found in a mango tree on 31st March 1875.

24.—*Accipiter nisus*, Lin.

Common in cold weather.

27.—*Aquila mogilnik*, S. G. Gm.

A young male shot in August.

* In this and some other cases, not having seen specimens, I cannot be certain whether the specific name has been correctly assigned—the bird referred to may be *C. pchunensis*. I have never yet examined a Southern Indian example of a Lesser Kestrel.—A. O. H.

28.—*Aquila clanga*, *Pall.*

Observed several times, and believed to breed near the Ekroot tank.

29.—*Aquila vindhiana*, *Frankl.*

Extremely abundant. Eggs taken from 28th October to 12th February. Some single eggs were set. One nest had three, but the majority only two eggs. An eagle's egg, which almost certainly belonged to this species, was brought to D. on 30th September.

31.—*Hieraetus pennatus*, *Gmel.*

Not uncommon along the River Bhima in the cold season, and may perhaps breed, but all the specimens D. has seen were immature. A single young bird was obtained on the Mann River, Sangola, on 11th December 1875.

33.—*Nisaetus fasciatus*, *Vieill.*

A nest with a single young bird just hatched out was found on 10th February. The hen was shot, and within two days the male appeared with another female and the young one disappeared. The pair went to another old nest of enormous size on an adjacent tree. Although several people were sent to the village officials with instructions to have the eggs taken, nothing was sent to us but two eggs of *N. ginginianus*, which had of course been taken from some other nest. Eggs were taken at Kassigaum on 13th January 1876, slightly set. Other eyries with young birds were seen at Dhotri and Subjar.

38.—*Circaetus gallicus*, *Gmel.*

Not uncommon in the bare parts of the district from September to the beginning of April. We have not observed it breeding.

39 *bis.*—*Spilornis melanotis*, *Jerd.*

Shot in September and observed at other seasons, but not known to breed in the district.

45.—*Buteo ferox*, *S. G. Gmel.*

D. shot a specimen in February on the Pundharpur tank.

50.—*Circus cyaneus*, *Lin.***51.—*Circus macrourus*, *S. G. Gmel.***

52.—*Circus pygargus*, Lin.

We are not sure about these three Harriers, but it is certain that one or more of them frequent the district in the cold season.

54.—*Circus æruginosus*, Lin.

Occasionally observed in the cold season.

55.—*Haliastur indus*, Bodd.

Rather rare; but on the 16th January D. shot a female from a nest (no eggs) on a small bush growing out of a rocky bank, 30 or 40 feet high, on the Bhima River. On dissecting her he found that the eggs would probably have been laid a week later. A nest with one egg and a young bird was taken on an island in the River Bhima, on 24th April. We observed a nestling on the Dew River, 14 miles from Poona, on 14th February.

56.—*Milvus govinda*, Sykes.

The only one identified by D. was *M. govinda*. It breeds freely from middle of September to middle of March. The greatest number of eggs found in a nest was three.

57.—*Pernis ptilorhyncha*, Tem.

Rather rare about Sholapoor. Saw a pair breeding on 6th February. They were very noisy.

59.—*Elanus cæruleus*, Desfont.

Moderately common. A nest with three eggs was taken on 10th July 1875. It breeds abundantly in Caladgi District, some 50 miles from Sholapoor, in December.

60.—*Strix javanica*, Gm.

Pretty common at all seasons, but although we know them to breed about Sholapoor, we were not fortunate enough to secure their eggs. D. got a nest with seven young birds in the Satara District, in February.

65.—*Syrnium ocellatum*, Lesson.

Observed and shot at Barsee, in May. D. has also seen it at Akulkote. It is very common in Satara, where a nest with one fresh egg was taken on 8th February, and another nearly perfect egg was taken out of the female.

68.—*Asio accipitrinus*, Pall.

Occurs in numbers all over the district in the cold weather.

69.—*Bubo bengalensis*, Franklin.

Common along all the brooks and rivers. Found numerous nests (*facing all points of the compass*) in November and December. Six was the greatest number of young or eggs observed in one nest. All the eggs, with the exception of one, which lay on a bare ledge of rock, were found in naturally formed holes in clay banks.

72.—*Ketupa ceylonensis*, Gmel.

On 14th February, in the Satara Districts, D. shot a hen from a nest which contained an addled egg. We have not observed this species in the Sholapoor Districts.

74.—*Scops pennatus*, Hodg.

Not very uncommon at any season, but chiefly observed in cold and rainy months.

76.—*Carine brama*, Tem.

Very common. Breeds January to middle of March. Generally lays four to five eggs, but D. noticed *three* birds sitting on two eggs in one hole!

81.—*Ninox lugubris*, Tick.

Rare, but specimens having been obtained both in cold and rainy seasons, it probably breeds about Sholapoor.

82.—*Hirundo rustica*, Lin.

Common in the cold season.

84.—*Hirundo filifera*, Stephens.

Common and breeds.

85.—*Hirundo erythropygia*, Sykes.

Common and breeds.

86.—*Hirundo fluvicola*, Jerd.

Very common. Breeds in great numbers under the Railway arch over the standing water of the Sholapoor tank.

89.—*Cotyle sinensis*, Gray.

Tolerably common. At Sangola it breeds singly, in river banks, in December. On the banks of the Bhima, D. got a single nest with three fresh eggs, in March.

90.—*Ptionoprogne concolor*, *Sykes*.

In the Sholapoor Districts it breeds in abundance in the rains and in February. At Egutpoora it was breeding in the verandah of the Engineers' bungalow in the middle of March and first week in August. At Lanoli on 20th March.

98.—*Cypselus melba*, *Lin*.

Permanent resident in Satara. Breeds, D. thinks, about the cliffs, and on old buildings in the fort there.

100.—*Cypselus affinis*, *Gray*.

Common all over the district.

102.—*Cypselus batassiensis*, *Gray*.

Very rare in the dryer portions of the Deccan. Tolerably numerous in the palm groves near Nulwar. D. saw three amongst some small palms about five miles from Akulkote.

107.—*Caprimulgus indicus*, *Lath*.

Moderately common and undoubtedly breeds, but we did not obtain its eggs.

112.—*Caprimulgus asiaticus*, *Lath*.

Common ; nests found in August.

117.—*Merops viridis*, *Lin*.

Common and breeds.

120.—*Merops persicus*, *Pall*.

D. got a young specimen near Pundharpur in October. They are not common, and appear only in the cold season.

123.—*Coracias indica*, *Lin*.

Common, but does not breed.

129.—*Halcyon smyrnensis*, *Lin*.

Very abundant. Breeds in March and April.

134.—*Alcedo bengalensis*, *Gmel*.

Fairly common and breeds. A nest taken at Satara in June.

136.—*Ceryle rudis*, *Lin*.

Common. Apparently breeds at all seasons, except the very hot months.

144.—Ocyrceros birostris, Scop.

Moderately numerous in suitable localities.

148.—Palæornis torquatus, Bodd.

Common, breeding in December, January and February.

149.—Palæornis purpureus, P. L. S. Müll.

Abundant in the Satara Districts, where it is a permanent resident. It breeds in the plains there in December and on the ghâts in March. During the rains it is very common throughout the Sholapoor Districts.

151.—Palæornis columboides, Vigors.

Moderately common along the very top of the ghâts, and breeds there.

An old bird shot, whilst feeding a young one, in March.

160.—Picus mahrattensis, Lath.

Commonest in suitable localities, and certainly breeds.

166 bis.—Chrysocolaptes delesserti, Malk.

Not uncommon on the ghâts. Nest, in a small tree, near the roots, found in March.

171.—Gecinus striolatus, Blyth.

A Green Wood-pecker, probably this one, observed near the top of the Bhore Ghât in September. *Not thoroughly identified.*

188.—Yunx torquilla, Linn.

As a winter visitant, moderately common. One obtained near Poona on 10th February was moulting.

194.—Megalaema viridis, Bodd.

Common in suitable localities and breeds. W. has frequently noticed them climbing like a Wood-pecker, but has not heard them tap.

197.—Xantholæma hæmacephala, Müll.

Very common and breeds.

199.—Cuculus canorus, Linn.

Appears sparingly during the rains and cold weather.

201.—Cuculus poliocephalus, Lath.

Scarce, but seen and procured during the rainy and cold seasons.

203.—*Cuculus micropterus*, Gould.

Common during the rains.

212.—*Coccystes jacobinus*, Bodd.

Common in the rains and believed to breed ; but not proved to do so.

214.—*Eudynamys honorata*, Lin.

Common in the rains and breeds.

216.—*Rhopodytes viridirostris*, Jerd.

A nest with two eggs taken at Nulwar in July. It is tolerably common in the jungles there.

217.—*Centrococcyx rufipennis*, Illiger.

Common and breeds.

219.—*Taccocua leschenaultii*, Lesson.

Common in the Nulwar jungles and observed at top of the Bhore Ghât. Common in the bare hills at Satara. Secured at Lanoli.

226.—*Æthopyga vigorsi*, Sykes.

Fairly common along the ghâts and breeds at Mahableshwar.

232.—*Cinnyris zeylonica*, Lin.

Found all over the Deccan. Commoner in the well-watered parts, and breeds.

234.—*Cinnyris asiatica*, Lin.

Common and breeds.

254.—*Upupa epops*, Lin.

A single specimen procured in the cold season. Probably not uncommon.

255.—*Upupa nigripennis*, Gould.

Very common and breeds.

256.—*Lanius lahtora*, Sykes.

Common, and breeds abundantly in the Poona and Sholapoor Collectorates at the end of the hot weather. W. has noticed it breeding at Nulwar and Raichore. D. observed that it was very rare in the Satara Districts.

257.—*Lanius erythronotus*, Vigors.

Very common in Satara; breeding freely in the beginning of the rains; observed at Lanoli. Rare in the Sholapoor District and does not appear to breed there.

260.—*Lanius vittatus*, Valenc.

Abundant, and breeds all over the Deccan.

265.—*Tephrodornis ponticeriana*, Gmel.

Common at the heads of the Bhore and Thull Ghâts, and Mr. Hume identified two specimens procured by W. at Nulwar as young birds.

268.—*Volvocivora sykesii*, Strickland.

A rather common winter visitant.

272.—*Pericrocotus flammeus*, Forster.

Not uncommon along the tops of the ghâts.

273.—*Pericrocotus brevirostris*, Vigors.

D. saw a flock of five or six of this at Sangola, but they are not common in these districts.

276.—*Pericrocotus peregrinus*, Lin.

Common, and breeds in the rains.

278.—*Buchanga atra*, Herm.

Common and breeds.

281.—*Buchanga cærulescens*, Lin.

Common on the ghâts; noticed on one or two occasions during the cold weather, at Sholapoor.

288.—*Muscipeta paradisi*, Lin.

Fairly scattered all over the Deccan. D. feels certain that it breeds at Satara. We noticed at Sholapoor all the birds seen in the rains were short-tailed specimens.

292.—*Leucocerca albofrontata*, Frankl.

Tolerably common, and breeds.

293.—*Leucocerca pectoralis*, Jerd.

Tolerably common. A nest with three eggs taken at Egutpoora on 6th September.

295.—*Culicicapa ceylonensis*, Swains.

Very common in Satara, and undoubtedly breeds there.

297.—*Alseonax latirostris*, Raffles.

Procured at Sholapoor in October, and at Egutpoora in the same month.

301.—*Stoporala melanops*, Vigors.

A visitant at Sholapoor in rains and cold weather.

305.—*Cyornis tickelli*, Blyth.

A few come to Sholapoor in the rains and cold weather. W. procured a specimen as late as March.

307.—*Cyornis ruficauda*, Swains.

A single specimen obtained at Sholapoor in July.

323 bis.—*Erythrostera parva*, Bechst.

A specimen procured at Sholapoor in February. It is not rare in the cold season.

342.—*Myiophonus horsfieldii*, Vigors.

Scattered all over the Deccan in suitable localities. W. got two nests, one on the Bhore Ghât on 5th August, and one on the Thull Ghât on 17th of same month. That on the Bhore Ghât was built on a ledge of rock some 15 feet in from the face of a Railway tunnel where 30 or 40 trains daily passed within a few feet of it. That on the Thull Ghât was in a cutting at the *entrance* of a tunnel and about the same height above and from the rails as the one on the Bhore Ghât. In both cases the eggs were much discolored by the smoke from engines, but on being washed, W. observed that one of the three eggs in each nest was of a decidedly *greenish blue*, finely speckled and splashed with pinky brown, while the others were of the *pale salmon-pink*, as described in Mr. Hume's Rough Draft of "Nest and Eggs." The male bird was sitting on one of the nests and was shot. W. saw numerous other nests, some high up on cliffs, beyond the reach of a 15-foot ladder. Two nests in holes in trees were reported to him, but he could not go to examine them. The nests were about 4 inches diameter by 2½ inches deep, inside, and 8 to 10 inches broad outside, and not more than 10 inches high. The foundation portion contained a great deal of clay and earth which seemed to be necessary to secure the nests in positions so exposed to the heavy gusts of winds which prevail on these ghâts during the monsoon.

345.—*Pitta brachyura*, Lin.

A visitant in September and October and in April and May at Sholapoor.

351.—*Cyanocinclla cyana*, Lin.

A common winter visitant throughout the Deccan.

353.—*Orocetes cinclorhynchus*, Vigors.

Moderately common at Sholapoor and observed at Poona and Nulwar during the rains.

385.—*Pyctoris sinensis*, Gmel.

Tolerably common in the Sholapoor District; more so in the better-wooded parts, where it breeds.

389.—*Alcippe poiocephala*, Jerd.

Moderately common at the top of the Satara Ghâts.

404.—*Pomatorhinus horsfieldi*, Sykes.

Very common along tops of ghâts. D. got a nest with two eggs in March.

436.—*Malacocircus malcolmi*, Sykes.

Common, and breeds.

438.—*Chatorhea caudata*, Dum.

Very common and breeds.

452.—*Ixus luteolus*, Less.

Pretty common in the Nulwar jungles.

460 bis.—*Otocompsa fuscicaudata*, Gould.

Rather common in wooded localities. D. took several nests in the Satara Hills in March and the two following months.

462.—*Molpastes hæmorrhous*, Gmel.

This is the common species at Sholapoor.

463.—*Phyllornis jerdoni*, Blyth.

Two specimens procured and others observed at Egutpoora, in November.

468.—*Iora typhia*, Lin.

Our Iora is of the *typical zeylonica* form. It is common and breeds abundantly in July. W. observed a pair building at Lanoli late in August.

470.—*Oriolus kundoo*, Sykes.

Common, and breeds in June and July.

473.—*Oriolus ceylonensis*, * Bonaparte.

A straggler in the Deccan.

475.—*Copsychus saularis*, Linn.

Tolerably common. Nest taken at Satara, in May.

479.—*Thamnobia fulicata*, Linn.

Abundant, and breeds from April to July.

481.—*Pratincola caprata*, Linn.

Common, and breeds from April to July.

483.—*Pratincola indica*, Blyth.

A very common winter visitant.

497.—*Ruticilla rufiventris*, Vieillot.

Fairly numerous during cold season.

507.—*Larvivora superciliaris*, Jerd.

Moderately common during rains and cold weather.

530.—*Orthotomus sutorius*, G. R. Forst.

Common, and breeds in June and July.

534.—*Prinia socialis*, Sykes.

Common. Nests taken in August.

539.—*Cisticola cursitans*, Frankl.

Common in all grass lands. It breeds in the rainy season.

543.—*Drymoica inornata*, Sykes.

Common, and breeds.

553.—*Hypolais rama* Sykes.

Common at all seasons.

562.—*Phylloscopus indicus*, Jerd.

One specimen only procured at Kurkulla, between head of Bhore Ghât and Poona, in February.

* Probably even if this supposed species be admitted to be distinct, the Deccan bird is *O. melanocephalus*.—Ed.

581.—*Sylvia jerdoni*, Blyth.

Commonest in Sholapoor during the cold season. We procured it in February, April and May.

589.—*Motacilla maderaspatana*, Gm.

Common, and breeds in cold weather and rains.

591 bis.—*Motacilla dukhunensis*, Sykes.

Common throughout the district during the winter months.

592.—*Calobates melanope*, Pall.

Common everywhere during winter.

593.—*Budytes cinereocapilla*, Savi.

A common winter visitant. Observed at Poona as late as the end of March.

594.—*Budytes citreola*, Pallas.

Common in winter throughout the district.

596.—*Pipastes maculatus*, Hodgs.

A common winter visitant.

600.—*Corydalla rufula*, Vieillot.

Common in the cold weather.

631.—*Zosterops palpebrosa*, Temm.

Not rare in the Satara Districts.

648.—*Machlolophus jerdoni*, Blyth.

Specimens procured at Lanoli in August and at Egutpoora in March. They certainly breed at these places, as in September, at the latter place. W. observed two parent birds with four young ones capable of flying out very short distances,

660.—*Corvus macrorhynchus*, Wagl.

Common and breeds from April to June.

663.—*Corvus splendens*, Vieillot.

Common, and breeds from May to July.

674.—*Dendrocitta rufa*, Scop.

Common along the ghâts.

684.—*Acridotheres tristis*, Linn.

Common, and breeds in May and June.

687.—*Sturnia pagodarum*, Gmel.

Not quite so common as *tristis*. Breeds at Satara in May.

690.—*Pastor roseus*, Linn.

A, to cultivators, distressingly numerous winter visitor.

694.—*Ploceus philippinus*, Lin.

Common, and breeds in July.

699.—*Munia punctulata*, Lin.

Common and breeds.

703.—*Munia malabarica*, Linn.

Very common, and breeds at all seasons.

706.—*Passer indicus*, Jard and Selby.

Very common, breeding at all seasons.

711.—*Gymnoris flavicollis*, Franklin.

Rare, but D. found it breeding in the Sholapoor Districts in April.

721.—*Euspiza melanocephala*, Scop.

A common winter visitant.

722.—*Euspiza luteola*, Sparrm.

Observed by D. in February, at Akulkote.

756.—*Mirafra erythroptera*, Jerd.

Very common, and dozens may be seen all along the line between Poona and Raichore; many of them perching on the telegraph wires.

758.—*Ammomanes phænicura*, Frankl.

Very numerous. Seen with No. 756 also perching on telegraph wires. Breeds plentifully throughout the Poona and Sholapoor Districts in April and beginning of May. Their nests, as a rule, are built in a hole in a bank, either of a river or a nullah, but sometimes in an ordinary *bund*. Nest well lined with hair and wool and warmly made—like a robin's. All the nests taken by D. during last season contained but two eggs each, but a nest containing four young Larks, which he believed to be of this kind, was brought to him in May.

760.—*Pyrrhulauda grisea*, Scop.

Very common, and appears to breed at all seasons.

765.—*Spizalauda deva*, Sykes.

Very numerous and breeds in July and August.

767.—*Alauda gulgula*, Frankl.

Not uncommon in Satara. D. took what he believed to be a nest of this species in May.

769.—*Galerida cristata*, Linn.

D. observed it to be common on the top of the Satara ghâts.

773.—*Crocopus chlorigaster*, Blyth.

Observed, but rarely, about Sholapoor. Commonest at Lanoli and Egutpoora. Nests taken on the Satara Hills, where it is common in March. Observed at Nulwar.

788.—*Columba intermedia*, Strickland.

Very common.

793.—*Turtur meena*, Sykes.

Common in Satara and the hills about.

794.—*Turtur senegalensis*, Lin.

Common throughout the district, where it also breeds.

795.—*Turtur suratensis*, Gmel.

Common in Sholapoor during the rains.

796.—*Turtur risoria*, Linn.

Common, and breeds.

797.—*Turtur tranquebarica*, Herm.

Common, and breeds.

800.—*Pterocles fasciatus*, Scop.

Abundant in several suitable localities, but not commonly distributed. Breeds in March.

802.—*Pterocles exustus*, Temm.

Very common, and appears to breed at all seasons.

803.—*Pavo cristatus*, Linn.

Common in suitable localities.

813.—*Gallus sonneratii*, Temminck.

Common along all the ghâts, and observed in the granite hills at Nulwar.

814.—*Galloperdix spadiceus*, Gmel.

Common along the ghâts. Nest procured in March, near Lanoli.

819.—*Francolinus pictus*, Jard and Selby.

Common, and breeds in September.

822.—*Ortygornis ponticeriana*, Gmel.

Common ; breeding in March and again in the rains.

826.—*Perdicula asiatica*, Lath.

Common in the hills at Satara and Nulwar.

827.—*Perdicula argoondah*, Sykes.

Very common, and breeds. .

828.—*Perdicula erythrorhyncha*, Sykes.

Only one specimen procured at Sholapoor, and one near Poona. Observed in the Satara hills.

829.—*Coturnix communis*, Bonnaterre.

Very common between November and end of March. This year (1877) this appeared in the Deccan early in September.

830.—*Coturnix coromandelica*, Gmel.

Very common, and breeds from about first August to middle of October.

832.—*Turnix taigoor*, Sykes.

Sparingly scattered all over the district, and breeds.

835.—*Turnix dussumieri*, Tem.

Common and breeds.

836.—*Eupodotis edwardsii*, Gray.

Common and breeds. It is very much more common during the rains and cold season than at other times.

839.—*Sypheotides aurita*, Latham.

Common throughout the plains of the Deccan, breeding freely in the vicinity of Sholapoor during September and October.

840.—*Cursorius coromandelicus*, Gmel.

Common, and breeds. .

842.—*Glareola orientalis*, Leach.

D. has seen it on the River Bhima during the cold season.

843.—*Glareola lactea*, Temm.

D. observed it to be common on the River Bhima in the cold season.

845.—*Charadrius fulvus*, Gm.

Very rare; observed on two or three occasions only.

849.—*Ægialitis curonicius*, Gm.

Common, and breeds from December to May.

852.—*Chettusia gregaria*, Pallas.

Common in some parts of the district during the cold weather.

855.—*Lobivanellus indicus*, Bodd.

Common, and breeds from March to August.

856.—*Lobipluvia malabarica*, Bodd.

Common; breeding from May to July.

858.—*Esacus recurvirostris*, Cuvier.

Not uncommon.

859.—*Ædicnemus scolopax*, S. G. Gmel.

*Not uncommon.

865.—*Grus communis*, Bechstein.

Tolerably common during the cold season.

866.—*Anthropoides virgo*, Linn.

This is the *kullum* of the Deccan, which it visits in immense flocks in the cold season.

870.—*Gallinago sthenura*, Kuhl.

Common in the cold weather.

871.—*Gallinago scolopacina*, Bonap.

Somewhat commoner than *G. sthenura*, during the cold weather.

872.—*Gallinago gallinula*, Linn.

Common in the cold season, but far less so than either of the two last species.

873.—*Rhynchæa bengalensis*, Linn.

Common. Observed at all seasons and we believe breeds here.

877.—*Numenius lineatus*, Cuv. .

Observed, but very rarely.

880.—*Machetes pugnax*, Linn.

D. got one specimen from a small flock which arrived at Pundharpur early in September last. He saw another large flock towards the end of the month.

882.—*Tringa subarquata*, Gld.

W. shot two or three at Sholapoor, in June 1874.

884.—*Tringa minuta*, Leisler.

Very common in the cold weather.

891.—*Actitis glareola*, Lin.

Very common in the cold season.

892.—*Actitis ochrophus*, Linn.

Very common in the cold season.

893.—*Actitis hypoleucus*, Linn.

Also very common.

894.—*Totanus glottis*, Linn.

A common cold weather visitant.

895.—*Totanus stagnatilis*, Bechstein.

This also is common.

897.—*Totanus calidris*, Linn.

Observed, but rarely.

898.—*Himantopus candidus*, Bonn.

Common in the cold season.

901.—*Hydrophasianus chirurgus*, Scop.

Sparsingly observed. Believed to breed.

902.—*Porphyrio poliocephalus*, Lath.

Sparsingly scattered all over the district in suitable localities, and believed to breed.

903.—*Fulica atra*, Linn.

Very common. Probably breeds.

905.—*Gallinula chloropus*, Linn.

Not rare.

907.—*Erythra phoenicura*, Pennant.

Tolerably common, and breeds. Five nests taken at Nulwar in July.

909.—*Porzana maruetta*, Leach.

Not rare. D. has obtained several specimens.

915.—*Leptoptilus argala*, Lath.

Very rare, but we have observed it. D. saw one feeding with a lot of Vultures.

916.—*Leptoptilus javanicus*, Horsfield.

W. is sure that he has seen this bird on more than one occasion about the marshy tanks on the outskirts of the Nulwar jungles. It is, however, a very rare visitant, and seen in the rainy season only.

917.—*Xenorhynchus asiaticus*, Lath.

D. is almost certain that he has observed this species.

913.—*Ciconia nigra*, Linn.

D. observed it in two places in the Sholapoor Collectorate—once in November and again in January.

919.—*Ciconia alba*, Belon.

Moderately common.

920.—*Melanopelargus episcopus*, Bodd.

Common; generally seen in pairs. D. got nests in the Sholapoor District in December and January, and observed birds breeding at Satara in February.

923.—*Ardea cinerea*, Linn.

Common. Apparently does not breed in the Sholapoor District.

924.—*Ardea purpurea*, Linn.

Sparingly observed.

925.—*Herodias torra*, *Buch. Ham.*

Abundant.

926.—*Herodias intermedia*, *Hasselt.*

Common.

927.—*Herodias garzetta*, *Linn.*

Also common.

929.—*Bubulcus coromandus*, *Bodd.*

Numerous during the rains and cold season. D. knows two places in the Sholapoor Collectorate, where it breeds in the hot weather.

930.—*Ardeola grayii*, *Sykes.*

Common.

931.—*Butorides javanica*, *Horsfield.*

Very common in Satara wherever the river and canal banks are well wooded.

934.—*Ardetta sinensis*, *Gmel.*

Not common. D. got a single specimen in some reeds at Pundharpur in October.

937.—*Nycticorax griseus*, *Linn.*

Moderately common.

938.—*Tantalus leucocephalus*, *Gmelin.*

Sparingly observed, but D. has seen it constantly on the Pundharpur tank. He does not think it breeds in the Sholapoor Collectorate. It does so higher up the Bhima in the Ahmednugger district.

939.—*Platalea leucorodia*, *Linn.*

Common, and breeds in April and May.

940.—*Anastomus oscitans*, *Bodd.*

Not uncommon in the Bhima during the rains and cold season.

941.—*Ibis melanocephala*, *Lath.*

Not rare. D., having observed them this year on the Bhima from October until about the middle of July, concludes that they probably breed in the district.

942.—*Inocotis papillosus*, Temm.

Common, breeding in May and again during the last three months of the year. We do not think the same pairs breed twice.

943.—*Falcinellus igneus*, S. G. Gmel.

Towards the end of September last D. saw a single specimen at Pundharpur.

944.—*Phoenicopterus roseus*, Pallas.

Observed, but very rarely.

950.—*Sarkidiornis melanonotus*, Pennant.

Moderately common in the rains and cold weather.

951.—*Nettapus coromandelianus*, Gmel.

Moderately common during the rainy and cold seasons.

952.—*Dendrocygna javanica*, Horsf.

Somewhat rare in the more open parts of the country, but very common about the wooded districts in the rains and cold weather.

953.—*Dendrocygna fulva*, Gm.

W. is sure that he has observed this species at Nulwar and shot several in 1873.

954.—*Casarca rutila*, Pallas.

Tolerably common on all the rivers; staying with us until nearly the end of the hot weather.*

957.—*Spatula clypeata*, Linn.

Not uncommon during winter

959.—*Anus pœcilorhyncha*, Penn.

Common, and having been observed at several places in the district during July and August, we assume that it breeds in these parts.

961.—*Chaulelasmus streperus*, Linn.

A very common winter visitant.

* This if correct is curious, as they begin to breed about the 'Tsomorari, Tsokhar, the Upper Indus, &c., in May, and the young are in the water sometimes, by the middle of July.—A. O. H.

962.—*Dafila acuta*, Linn.

Observed, but in no great numbers.

963.—*Mareca penelope*, Linn. .

Quite as common as the Gadwall.

964.—*Querquedula crecca*, Linn.

Commoner even than the Gadwall.

965.—*Querquedula circia*, Linn.

Very common.

968.—*Fuligula ferina*, Linn.

Tolerably common in the cold season according to W.'s experience, but D. calls it a rare visitant.

969.—*Aythya nyroca*, Gld.

Procured, but it is rare.

971.—*Fulix cristata*, Lin.

Fairly common.

975.—*Podiceps minor*, Gmel.

Common, and breeds in the rains.

983.—*Gelochelidon anglica*, Montague.

Rare, but a few remain with us all through the year according to D., but W. has observed them in the rains and winter only.

984.—*Hydrochelidon hybrida*, Pall.

The remarks in regard to the last species apply to this also.

987.—*Sterna melanogastra*, Temm.

Very common on all the rivers, where it also breeds.

995.—*Rhynchops albicollis*, Swainson.

Observed by D., who says it is not common.

1004.—*Pelecanus philippensis*, Gmel.

Very rare. D. observed a single specimen on the tank at Pundharpur, in September this year.

1006.—*Phalacrocorax fuscicollis*, Steph.

W. has identified this bird at Nulwar, and is almost positive that he has observed it at Sholapoor. D. has not seen it.

1007.—Phalacrocorax pygmæus, Pall.

Very common.

1008.—Plotus melanogaster, Gmelin.

Sparingly scattered all over the district, and believed to breed.

Our list numbers 255, whilst Mr. Fairbank's "List of Birds collected in the vicinity of Khandala, &c.," (*vide* Vol. IV., STRAY FEATHERS) numbers 314 species.

We have noted 44 species which are not included by Mr. Fairbank; these are as follows:—

- | | |
|--|---|
| 9.— <i>Falco peregrinator</i> . | 880.— <i>Machetes pugnax</i> . |
| 27.— <i>Aquila mogilnik</i> . | 882.— <i>Tringa subarquata</i> . |
| 28.— <i>Aquila clanga</i> . | 884.— <i>Tringa minuta</i> . |
| 50.— <i>Circus cyaneus</i> . | 897.— <i>Totanus calidris</i> . |
| 98.— <i>Cypselus melba</i> . | 905.— <i>Gallinula chloropus</i> . |
| 120.— <i>Merops persicus</i> . | 916.— <i>Leptoptilus javanicus</i> . |
| 144.— <i>Meniceros bicornis</i> . | 917.— <i>Xenorhynchus asiaticus</i> . |
| 171.— <i>Gecinus striolatus</i> . | 934.— <i>Ardetta sinensis</i> . |
| 199.— <i>Cuculus canorus</i> . | 943.— <i>Falconellus igneus</i> . |
| 216.— <i>Rhopodytes viridirostris</i> . | 950.— <i>Sarkidiornis melanonotus</i> . |
| 219.— <i>Taccocua leschenaultii</i> . | 951.— <i>Nettapus coromandelianus</i> . |
| 273.— <i>Pericrocotus brevirostris</i> . | 962.— <i>Dafila acuta</i> . |
| 539.— <i>Cisticola cursitans</i> . | 963.— <i>Mareca penelope</i> . |
| 591 <i>bis</i> .— <i>Motacilla dukhunensis</i> . | 968.— <i>Fuligula ferina</i> . |
| 767.— <i>Alauda gulgula</i> . | 969.— <i>Aythya nyroca</i> . |
| 769.— <i>Galerida cristata</i> . | 971.— <i>Fulix cristata</i> . |
| 842.— <i>Glareola orientalis</i> . | 983.— <i>Gelochelidon anglica</i> . |
| 843.— <i>Glareola lactea</i> . | 984.— <i>Hydrochelidon hybrida</i> . |
| 852.— <i>Chettusia gregaria</i> . | 987.— <i>Sterna melanogastra</i> . |
| 858.— <i>Esacus recurvirostris</i> . | 995.— <i>Rhynchops albicollis</i> . |
| 870.— <i>Gallinago sthenura</i> . | 1004.— <i>Pelecanus philippensis</i> . |
| 877.— <i>Numenius lineatus</i> . | 1006.— <i>Phalacrocorax fuscicollis</i> . |

Mr. Fairbank's list contains 103 species, which we have not observed, as follows:—

- | | |
|--|---|
| 25.— <i>Accipiter virgatus</i> . | 164.— <i>Yungipicus nanus</i> . |
| 32.— <i>Neopus malaiensis</i> . | 179.— <i>Micropternus gularis</i> . |
| 34.— <i>Limnaetus caligatus</i> . | 181.— <i>Brachypternus puncticollis</i> . |
| 35.— <i>Limnaetus cirrhatus</i> . | 193 <i>bis</i> .— <i>Megalasma inornata</i> . |
| 48.— <i>Butastur teesa</i> . | 198.— <i>Xantholoma malabaricus</i> . |
| 56 <i>bis</i> .— <i>Milvus melanotis</i> . | 202.— <i>Cuculus sonnerati</i> . |
| 61.— <i>Strix candida</i> . | 205.— <i>Hierococcyx varius</i> . |
| 63.— <i>Syrnium indranceo</i> . | 208.— <i>Cacomantis passerinus</i> . |
| 74 <i>sept</i> .— <i>Scops brucei</i> . | 222.— <i>Taccocua affinis</i> . |
| 91.— <i>Ptyonoprogne rupestris</i> . | 233.— <i>Cinnyris minima</i> . |
| 104.— <i>Dendrochelidon coronata</i> . | 238.— <i>Dicaeum erythrorhyncha</i> . |
| 113.— <i>Caprimulgus mahrattensis</i> . | 239.— <i>Dicaeum concolor</i> . |
| 114.— <i>Caprimulgus monticolus</i> . | 240.— <i>Piprisoma agile</i> . |
| 115.— <i>Harpactes fasciatus</i> . | 253.— <i>Dendrophila frontalis</i> . |
| 118.— <i>Merops philippinus</i> . | 261.— <i>Lanius cristatus</i> . |
| 119.— <i>Merops leschenaulti</i> . | 267.— <i>Hemipus picatus</i> . |
| 127.— <i>Pelargopsis gurali</i> . | 270.— <i>Graucalus macei</i> . |
| 140.— <i>Dichoceros cavatus</i> . | 277.— <i>Pericrocotus erythropygius</i> . |
| 141.— <i>Hydrociassa coronata</i> . | 280.— <i>Buchanga longicaudata</i> . |
| 145.— <i>Tockus griseus</i> . | 282.— <i>Chaptia seneca</i> . |
| 153.— <i>Loriculus vernalis</i> . | 285.— <i>Dissemurus paradiseus</i> . |

290.—*Hypothymis azurea*.
 309.—*Cyornis pallipes*.
 310.—*Muscicapula superciliaris*.
 354.—*Geocichla cyanotis*.
 356.—*Geocichla unicolor*.
 359.—*Merula nigropileus*.
 398.—*Dumetia albugularis*.
 399.—*Pellorneum ruficeps*.
 433.—*Malaccocircus griseus*.
 435.—*Malaccocircus somervillei*.
 437.—*Layardia subrufa*.
 448.—*Hypsipetes ganeesa*.
 450.—*Crinigor ictericus*.
 464.—*Phyllornis malabaricus*.
 469.—*Irena puella*.
 471.—*Oriolus indicus*.
 476.—*Cercotrichas macrura*.
 488.—*Saxicola opistholeuca*.
 491.—*Saxicola isabellina*.
 492.—*Saxicola deserti*.
 514.—*Cyanocula sucoica*.
 515.—*Acrocephalus stentorius*.
 516.—*Acrocephalus dumetorum*.
 538.—*Prinia hodgsoni*.
 551.—*Franklinia buchanani*.
 554.—*Phylloscopus tristis*.
 558.—*Phylloscopus lugubris*.
 559.—*Phylloscopus nitidus*.
 560.—*Phylloscopus viridanus*.
 561.—*Phylloscopus affinis*.
 563.—*Reguloides occipitalis*.

565.—*Reguloides proregulus*.
 582.—*Sylvia affinis*.
 583.—*Sylvia curruca*.
 591 *bis*.—*Motacilla dukhunensis*.
 595.—*Ichnonidromus indicus*.
 601.—*Corydalla striolata*.
 602.—*Agrodroma campestris*.
 603.—*Agrodroma similis*.
 645.—*Parus caesi*.
 686.—*Acridotheres fuscus*.
 701.—*Munia striata*.
 704.—*Estrela amandava*.
 705.—*Estrela formosa*.
 716.—*Emberiza huttoni*.
 724.—*Melophus melanictes*.
 738.—*Carpodacus erythrinus*.
 761.—*Calandrella brachydactyla*.
 768.—*Alauda malabarica*.
 775.—*Osmotreron malabarica*.
 786.—*Palumbus elphinstonei*.
 792.—*Turtur rupicolus*.
 844.—*Squatarola helvetica*.
 885.—*Tringa temminckii*.
 900.—*Parra indica*.
 910.—*Porzana bailloni*.
 928.—*Demiegretta gularis*.
 933.—*Ardetta cinuamomea*.
 960.—*Anas caryophyllacea*.
 967.—*Fuligula rufoa*.
 985.—*Scena aurantia*.

In STRAY FEATHERS, Vol. V., p. 503, Captain Butler adds three species to Mr. Fairbank's list, viz.

133.—*Ceyx tridactyla*, *Pall.*

165.—*Hemicircus cordatus*, *Jerd.*

798.—*Chalcophaps indicus*, *Linn.*

Making, if all the species have been correctly identified, a total of 361.

I Lake in Oodeypore.

THE native state of Oodeypore, by far the most beautiful district in Rajpootana, boasts, amongst other attractions, a number of artificial lakes, which include some of the largest in the Empire.

The largest of all, the Deba Lake, covers, when full, probably over 100 square miles of country.

Of the second class of these lakes, Kunkrowlee, probably about half the size of the Deba, is the most celebrated.

All these lakes have been formed in the same way, viz., by blocking up with huge dams the drainage outlets of tracts, elsewhere more or less entirely encompassed by low ranges of rocky hills.

At Kunkrowlee there were two such outlets, the more important of which, perhaps 500 yards in length, is blocked by a masonry and earthwork dam, 120 feet high in the centre, double this in width, and entirely faced on the lake side with endless symmetrical flights of steps, terraces and piers, adorned with beautiful many-pillared summer houses, ornamental gateways and the like, all constructed entirely of white marble, truly squared and laid, and, in the case of the summer houses and gateways, elaborately and beautifully carved.

At either end of the dam rise to a height of two or three hundred feet, dark rocky hillocks, sparsely besprinkled with dwarf trees and stunted bushes, and crowned with picturesque but ruined castles. Right and left, as far as the eye can reach, stretch the blue waters of the placid lake, while opposite, in the far distance, a thin ill-defined hazy line indicates the distant shore.

I spent a week last cold weather in a camp pitched upon this magnificent "bund," (as the dams are called by the Indians), and as we explored the avifauna of the lake pretty thoroughly—and as this represents fairly that of hundreds of other similar large and small sheets of water spread throughout the country—I propose to notice briefly every species that I met with there.

I do this the more readily that, so far as I know, no list of any kind has ever been given of any birds from Oodeypore. In fact, so inaccessible has this state remained until quite lately to all Europeans, except the particular Political Agent in charge, that I doubt whether a single specimen has ever been preserved within its limits until I visited it this year.

I marched through far too small a portion of the state, (only in fact the country lying between the Deysuri Pass of the Aravallis and Kunkrowlee, and this latter and Mhairwarrah) to attempt any general list of the Birds of the State, but the lake itself was fairly exhaustively dealt with.

The lake is a favourable example of one type of our Indian sheets of water, *viz.*, of that devoid of cover on the banks, and rushes, and the like near the margins; and this type yields a much smaller number of species than those of the other type where the lake, embosomed in cover, is fringed and skirted and be-greened with belts and islets of rush and reed.

Here in many places the bare rock goes down steep into the water, and elsewhere the margin is hard bare earth or sand, here and there thinly veiled in short turf. It boasts an island or two it is true, but these are bare and rocky, homes only for Cormorants, though on one of them a single tree that has managed to struggle up to a respectable altitude, bears a huge nest of *Haliaetus leucorhynchus*, which, when we visited the place early in March, contained two fully-fledged young ones, just able to fly.

No other bird of prey was seen on the lake, no Osprey, no Peregrine, no Spotted Eagle.

About the water *Hirundo rustica*, *H. fluviicola* and *Cypselus affinis* abounded. *Ceryle rudis* hovered over the water, ever and anon making sudden plunges, and *Halcyon smyrnensis* sat sulkily here and there, perched indeed on stakes planted in, or mud walls overlooking, the water, but clearly considering this no concern of his. *Motacilla maderaspatana*, *Budytes flava* and *cinereocapilla* trotted about at the waters' edge, to which Sparrows, a few Blue Pigeons, common Mynahs (*A. tristis*) and Starlings came down to drink. In one place, on some trees overhanging the water, was a flock of the Indian Rose-headed Paroquet (*P. purpureus*), and in the bushes around them I shot a pair of Gray's Sirkeer (*Taccocua sirkee*, vide S. F., V, 219) and saw several Indian Finch Larks (*Pyrrhuloxia grisea*.)

A short distance inland, of course, there were many other species of land birds, but these were all I saw actually over the lake or by its margins.

Of shore birds there were but few. A single Snipe (*G. scolopacina*) was observed leisurely walking about the bare bank, in broad daylight, and poached without law, under the impression that he was something else, no one expecting to find a real Snipe in such a situation. *Tringa minuta*, *Lobivanellus indicus*, *Himantopus candidus*, *Actitis glareola*, *Machetes pugnax*, and a few *Limosa aegocephala* standing about in the shallow water were all we secured, and I believe all that were to be seen. Of waders, the Coromandel Shell-eater, numerous Herons, grey, white and purple, the Little Egret, and the Pond Heron were all that were to be found. There were no Rails, though on a patch some acres in extent of floating water weeds, the Indian Jacana (*Parra indica*) and the Water Pheasant (*H. chirurgus*) were abundant. We saw no Water Hens, but on the lake myriads of Coots brooded in dusky clouds, to rise with a surging roar like that of the waves on a shingly beach, at the first gun shot.

Indeed the whole lake, except towards its margin, was as remarkable for the enormous number of Water Fowl it harboured, as were its shores for the paucity of other birds.

There are no boats on the lake. The only one available being one specially brought out for our delectation by H. H. the Maharajah, who had come out to meet and receive us. The consequence was that the Water Fowl were absolutely unmolested except when they ventured within 50 yards of the shore, which, I think, few but Teal and Shovellers ever did.

Conspicuous, in enormous pinky-white legions, were the common Flamingo, of which there were many, many, thousands,

scattered about the further and shallower portions of the lake. Great numbers of the Bar-headed Goose, in parties of from 50 to 300, were to be seen in all directions, and often intermingled with these small families of the Black-backed Goose (*Sarkidiornis melanotos*). No other Geese were met with; no Cotton or Whistling Teal, (*Nettapus coromandelianus*, *Dendrocygna javanica*) no Brahminy's (*Casarca rutila*) or Shell Drakes, but Shovellers (chiefly along the shores) Mallards, Grey Duck (*A. pacilorhyncha*), Gadwall, Pintail, Widgeon, the White-eyed Duck (*Aythya nyroca*), and Common Teal in a profusion that would baffle description, and if described would exceed belief.

The Red-crested Pochard (*Fuligula rufina*) was to be met with continually, diving and swimming about in densely agglomerated bands, and most plentiful of all the Ducks, the Tufted Duck or Indian Golden-eye (*Fulix cristata*) rivalled in numbers even the swarming tribes of Coots.

Dab-chicks popped up and down around one whichever way we steered, and here and there the long white snake-like necks of the Crested Grebe caught the eye against a dense black background of Coots and Cormorants.

These latter, both the common kind (*P. carbo*) and the little one (*P. pygmaeus*) abounded, many occupied in fishing lustily, but the majority, perhaps, sunning themselves with outspread wings, in company with the Silver-laced Snake-bird (*Plotus melanogaster*) on every rock, island or stake that the lake afforded.

As for Pelicans, I have only once or twice in my life seen such a display. There were only two species—one the silvery *crispus*, the other the huge, pinky birds that we in India have hitherto (as I now think erroneously) called *onocrotalus*, but of these there were simply *miles*. As far as I could judge, however—for they all kept mixed up in the same flocks—*crispus* was greatly in a minority.

The only Gulls were *L. ridibundus* and *brunneicephalus*, both plentiful to a degree, flying about everywhere or floating lazily along conspicuous in their delicate tints amongst the inky droves of Coots.

As for Terns, I cannot wholly account for it, but there were absolutely none. *S. melanogastra* and *seena* were doubtless away already to their breeding haunts, the sandy islands of some river, and the place was not suited to the Whiskered Tern (*H. hybrida*), but *S. caspius* might have been confidently expected to occur on such a vast sheet of water, and the Gull-billed Tern could hardly have left so early. Be the cause as it may, however, not one single true Tern did I see during the

whole week, of which I spent several hours daily on the lake.

I did, however, see several parties of a bird that I never should have expected to meet with, and this was the Scissor-Bill or Skimmer (*Rhynchops albicollis*). Of all the thousands of times that I have met with this, in Upper India, extremely common bird, never once till this time had I seen it anywhere but on the larger rivers, on whose churs it breeds, as every egg-collector here knows, in countless numbers.

I once doubted (Vol. IV., 32; V. 225) the occurrence of this species on the little lake at Aboo, some 80 or 90 miles west of Kankrowlee, but after seeing so many on this lake, I can quite understand that some of these, on their way to the estuary of the Loonee, where numbers are said to breed, may have paid a passing visit to the Aboo Lake which lies directly in their route.

A. O. H.

Wild Swans in Sind.

BY W. T. BLANFORD.

SOME Wild Swans were first seen in Sind in January last, in the Manchhar Lake, near Sehwan, by Mr. H. E. Watson. Subsequently on February 12th, 1878, Mr. Watson had the good fortune to find a small flock of five in another part of the Sehwan district, and to shoot three. He has sent me the skins of two, with a request that I would identify them. I may perhaps say at once that the skins are, I think, unquestionably adults of the Mute Swan, *Cygnus olor*, the same as the Tame Swans of English rivers and ponds, and that this is the first time that the adult bird has been obtained in India, or that any Swan, so far as I am aware, has been noticed in India so far to the southward.

Two previous notices of the occurrence of Wild Swans in India have been cited by Mr. Brooks (Proc. A. S. B., 1872, p. 63). The first was by Mr. Hodgson, who procured a specimen in the valley of Nepal. The skin was lost or not preserved, but a drawing was taken, and by means of this the species was identified with *C. ferus*, under which name the bird is quoted in both the British Museum Catalogues of Mr. Hodgson's collections. The identification was confirmed by Mr. Brooks, from an examination of the original drawing.

The second notice was by Mr. Hume in the *Ibis* for 1871, p. 412, where he described a pair of immature specimens obtained by Captain Unwin in the Upper Punjab, and proposed for them the name of *C. unwini*. It was, however, shown by the Editor that the specimens in question were probably the young of *C. olor*. This conclusion is strongly supported by the capture of adults of the same species in Sind, and by a specimen shot at Attock by Lieutenant Hill of the Rifle Brigade, on the 17th January 1878, and presented to the Indian Museum, Calcutta. This last-mentioned skin is not fully adult, being slightly greyish and with the tubercle on the bill undeveloped, but the species is unmistakeable.

Mr. Watson wrote to me the following account of the capture of these Swans: "I shot three Swans this morning. As far as I can judge they are identical with the English species" (that is the Tame Swan); "there were five on a small 'dhand' or tank, about half a mile or less in length by a quarter of a mile or less in breadth. I went to shoot ducks, but seeing these large white birds, I went after them and recognized them to be the same as those I had seen on the Manchhar. They let a boat get pretty close and I shot one. The other four flew round the tank a few times and then settled on it again. I went up in the boat and fired again, but without effect. They flew round and then settled again. The third time I shot another; the three remaining again flew round and settled, and the fourth time I fired I did not kill. Exactly the same thing happened, the birds flew round and settled close to me and I shot a third. The remaining two flew a little distance and settled, but I thought it would be a pity to kill them. I considered that there would be more than I could skin myself (for I have no one that can do it for me) so I began to shoot ducks, and then the two remaining swans flew by me, one on the right and one on the left, so that I could easily have knocked them over with small shots. However I spared them and came home with three."

Mr. Watson also sent me full details of coloration, measurements, and weight. From these and a few additional measurements on the dried skins I take the following account:—

The colour of all was pure-white with a slight buff or golden tint on the head; (this has disappeared from the dried skins, and may perhaps have been due to the feathers being stained). The bill was orange, varying in depth of color, and in one bird pale buff; the tip of the mandible, the lores, and a patch extending back from the nostril to the base of the tubercle, black; the tubercle was all black in one specimen, black with

the anterior portion orange in another; legs black. The following are measurements:—

	No 1.	No. 2.	No. 3.
	feet inch	feet inch	feet inch.
Length from tip of bill to end of tail ...	4-10·5	5-2	5-0
Expanse	6-6	7-0	6-10
Closed wing	1-10	1-11	.....
Tail from vent	0-9-75	0-10-25	0-9-75
Do. from insertion of tail feathers ...	0-9	0-10	.....
Wings short of end of tail ...	0-6-25	0-8-75	0-6
Bill from gape	0-3-75	0-3-8	.....
Tarsus measured on inner side ...	0-3-8	0-4-2	.....
Weight	17½lbs.	19lbs.	17½lbs.

The occurrence of these birds so far to the southward must be very rare and exceptional. As previously noticed the fishermen of Sind, all of whom are fowlers by profession, and of course thoroughly acquainted with every aquatic bird in the country, had never seen swans before, and did not know what they were, so the fact of two different flocks being seen by one observer in the course of the same season is very remarkable. Mr. Watson is, I believe, so far as is known, the first sportsman who has ever killed an adult wild swan in India.

Further Notes on the Swans of India.

THE past winter has been an unusually severe one in Western India, and in Sindh especially* has resulted in the appearance of several very unexpected visitors, palæarctic forms not hitherto recorded from this province.

Amongst these are the Common Swan, (*C. olor*) in regard to which Mr. Blanford has written fully, and of which one fine adult specimen has been added to our Museum by the kindness of Mr. H. E. Watson, of the Sindh Commission.

Swans have long been known to be almost regular cold weather visitants to the extreme north-western portions of the Empire, viz., to the Huzara and Peshawur districts, and a certain amount of information as to their occurrence elsewhere and at other seasons has accumulated, which it may be as well to put on record.

The first Swan, of which we have any record, is one shot in the valley of Nepal, in January 1829, and which, although the specimen was destroyed by insects, has been with some confidence assigned by Mr. Brooks and others to *C. ferus*. In regard to this Mr. Hodgson notes on a copy of his Catalogue which he sent me:—

“The valley of Nepal is sub-tropical, and of course no habitat for the Swan. The specimen I got was obtained in a winter

* See Mr. Murray's paper, page 108.

of very unusual severity. The bird must be a purely accidental straggler, as I could not learn that any like it had ever before been seen in Nepal."

In reply to queries of mine on the subject, Dr. Scully says: "I have made enquiries from a number of Nepalese, and I cannot find any one now remaining who ever remembers to have seen a wild Swan in the valley."

"In Asiatic Researches, XVIII., pt. II., 125, Hodgson gives *Cygnus* as one of the *Natatores* which usually pass over the valley, seldom alighting, and only for a few hours."

"At page 127 he adds: India, I fancy, is too hot for the taste of the *Natatores*, a great majority of which seem to affect Arctic regions, or at least high latitudes. I throw out the remark for canvass and enquiry, and for fear I should deceive any one by the display of the genus *Cygnus* at the head of my list, I must add that the wild Swan was never seen here (valley of Nepal) but once in the mid winter of 1828, when the apparition suggested a new version of the well-known hexameter

"*Rara avis in terris, alboque similima cygno.*"

The next occurrence of Swans, of which I have a record, was near Peshawur, in 1857, when a small flock were seen, and one shot and placed in the Peshawur Museum, whence it was sent to me by Sir F. Pollock in, I think, 1867.

This Swan was shot by W. Mahomed Oomer Khan, who wrote to me about it as follows:—

"In the month of January 1857, I shot this Swan in the Peshawur District on the Shah Alum River, about a mile and a half on this side of the Cabul River. Neither before nor after have I seen other Swans, but a few years after I killed it, I heard from the shikaris of Hushtnugger (also in the Peshawur District) that they had recently seen five of these birds in the Agra village lake, in this same district, but had failed to shoot any."

The specimen had been so entirely ruined by exposure and insects that I could not be certain what species it belonged to, although from what remained of the bill and head I guessed it to be *C. olor*.

In 1871 Captain Unwin, of the 5th Goorkhas, sent me the skins of a pair of Swans with the following extract from his diary, under date 17th January 1871:—

"To-day, while Duck shooting on the Jubbee stream on the border of the Hazara and Rawul Pindie Districts, during a short halt for breakfast on the banks of the nullah, I was attracted by seeing two large white birds flying over the stream some 250 yards lower down. The Jubbee has here a wide stony bed with a small stream in the centre, forming occasional pools, in

one of which the birds seemed inclined to alight. Changing their intention, however, they came flying up, and passing me about 60 yards off; to my surprise and delight I recognised in them most undoubted wild Swans. Firing with loose shot at that distance was useless; so I watched in the hope that they would settle in some of the pools higher up the stream, and thereby afford a stalk, but they continued their slow, heavy flight until I lost them in the distance.

"Concluding that they would not stop till they reached the Indus some 20 miles off, I was returning to my breakfast, a sadder and a wiser man, when in taking a last look in their direction I saw them returning. I hastily got in the centre of the nullah in their line of flight, and as they rose slightly to avoid me, fired both barrels, No. 3 shot, at the leader. She (for it proved to be the female) staggered, but went on, slowly sinking, till she settled in a large pool, about 400 yards off, accompanied by her mate, which alighted close beside her.

"The pool, being commanded by a high bank, offered an easy stalk, and getting round into a favorable position, I found the Swans within 20 yards of me. A crowd of Gadwall (*C. streperus*) which was close by, took flight on seeing me, but the male Swan stuck nobly by his mate and paid dearly for his fidelity, and shortly I had the satisfaction of landing them both.

"The villagers who collected to see the birds gave the local name as "Penr" (pronounced with a nasal *n*), and told me that the birds came there occasionally once in every three or fours years."

I may here notice that in other parts of Upper India this name "Penr" is usually applied to Pelicans.

On the specimens sent by Captain Unwin I made the following remarks in the *Ibis*, 1871, 412:—

"Neither of these Swans is adult. The general colour of the lower surface is a dull white; of the upper whitey-brown; the crown and occiput wood-brown; the greater portion of the wing, the scapulars, and rump are wood, or sandy brown. There is nowhere any trace of a "sooty grey." The brown is essentially a buffy or sandy brown, though here and there, as in the feathers of the base of the neck, a faint greyish shade is intermingled.

"These birds are, therefore, clearly not the Polish Swan, which is white at all ages. The bill exhibits no trace of a tubercle; the feathers of the forehead are prolonged to a point, only very slightly truncated. The colouring of the soft parts was carefully noted in the fresh specimen by Captain Unwin, and even in the dried specimen is clearly distinguishable. If from each side of the frontal tongue of feathers, about half an inch

from its point, a slightly curving line be drawn to a point on the edge of the upper mandible about a quarter of an inch from the gape, the whole of the space enclosed by such line between it and the eye is perfectly black. At the extreme point of the frontal feathers again is a black band, about a quarter of an inch wide, which extends right and left over the whole nareal space. The nail is black; the rest of the bill was light grey. The legs and feet, I may add, were greyish black. Both male and female, though differing somewhat in size, are precisely similar, both as regards plumage and coloration of the bill. The bill is slightly spatulate. In the male the upper mandible is 1.1 wide opposite the nostrils, and 1.23 wide near the tip. The following are dimensions of both birds measured in the flesh:—

Male.—Length, 55.5; expanse, 84.37; wing, 23.12; tail from vent, 8.5; bill at front, straight from termination of frontal plumes to tip, 3.5; from anterior angle of eye, 5.15; from gape, 4; tarsus, 4.05; mid toe to root of claw, 5; hind toe, 1; foot, greatest length, 8.37; breadth, 6.62. Weight, 15 lbs.

Female.—Length, 53.12; expanse, 82.37; wing, 21.38; bill at front from frontal plumes straight to tip, 3.55; from anterior angle of eye, 4.75; from gape, 3.9; tarsus, 3.8; mid toe to root of claw, 4.8; hind toe, 0.7; foot greatest length, 7.5; greatest width, 6.5. Weight, 13 lbs. In both the irides were dark brown.

I could not at the time satisfactorily identify these birds, and concluded that they were either the young of *olor* or *buccinator*, or of some undescribed species. If the latter *should prove* to be the case, I suggested for them the name of *unwini*, but I did *not unconditionally*, as Mr. Blanford gives us to understand, propose for them this name.

The Editor of the *Ibis* suggested that they were probably the young of *olor*, in which identification, having now compared them with an adult, I can entirely concur.

In the cold weather of 1871-72, Dr. Stoliczka, when in Cutch, thought he saw Swans there. He says, J. A. S. B., 1872, 229: "While crossing the Rann from Kachh to Pachain early in November (1871), I noticed several Swans, but at too great a distance for it to be possible to form an idea as to the species the birds belonged to."

Until recently I had always considered, (S. F., IV., 33) that Stoliczka, being very short-sighted, had mistaken Pelicans (the white *P. crispus* abounds there) for Swans, but the recent occurrence of Swans in Sindh renders it not improbable that Stoliczka was right after all.

Between 1872 and 1876 I received notices of Swans being killed on three occasions, on the Swat and Cabul rivers, in the Peshawur District, and in Kohat near one of our salt mines, in November, January, and February. In one case a pair, in another three, and in the last case five were seen, one being shot in each case, but none preserved.

In 1877 Captain Butler learnt from some of the telegraph officers in the Persian Gulf that Swans had been occasionally seen about the head of that gulf, and the mouths of the Euphrates.

I may mention that Major St. John obtained a single immature specimen of a Swan at Teheran, which has been with some hesitation referred to *C. ferus*. During the winter he informs me that Swans abound on the southern shores of the Caspian, especially in the huge Murdab (or dead water) back water between Enzeli and Resht. According to Pallas, Zoogr. Ross. As., II., 210—217, *Cygnus ferus* (which he calls *olor*, and under which he apparently includes *bewicki*) is extremely abundant in the Caspian wintering in the Southern portion, while *olor* (which he calls *sibilus*) is, it may be gathered from his remarks, less numerous in the localities he visited, (he only touched the northern shores of the Caspian) and affects more temperate climes than *ferus*.

From Severstzoff we know that both *Cygnus ferus* and *C. olor* occur and breed in parts of Eastern Turkestan, the Issik-kul, and country south of Lake Balkash; and he also mentions a *Cygnus altumi*, of Homeyer, as occurring there—a species of which I never previously heard, and which I have not had time to trace.

Dr. Scully, it will be remembered (S. F., IV., 179,) saw captive specimens of *C. olor* near Kashghar itself, and was informed that it was extremely plentiful further north at Aksu, and further east at Lob.

Prjevalsky mentions both *C. ferus* and *olor* as observed as migrant, (and as possibly breeding in some localities) in S. E. Mongolia, Kokonor, and Dalainor, &c., and he also refers to *C. bewickii* as seen in company with three others.

Both Swinhoe and David and Oustalet give *Cygnus ferus* and *Oygnus bewicki* as occurring in China, at any rate as far south as Shanghai, together with another smaller Swan, *C. davidi* of Swinhoe, which Taczanowski, according to David and Oustalet,* is most unaccountably inclined to unite with *C. sibilus*, Pallas, which is quite clearly *C. olor*.

* Père David and his confrère remark that Pallas has indicated a Swan "en termes fort vagues, sous le nom de *Cygnus sibilus*." I must dissent from this. I think Pallas in his Zoogr. Ross. As., p. 216, about as explicitly indicates *olor* by his *sibilus* by contrasting it with *ferus* (his *olor*, (a) *major*) as it was possible for any one to do.

Throughout the whole tract therefore north, north-east, and north-west of us from Teheran to Sanghai there are plenty of Swans, and it is by no means surprising that in severe winters some of these should extend their migrations to the more northern portions of this empire.

During this past cold season Swans have been numerous in the far North West. One was killed, as mentioned by Mr. Blanford, near Attock in January, and I heard of two others being killed in the Peshawur district in February, and of many others being seen.

In February, too, Mr. Watson killed the Swans referred to by Mr. Blanford in Sindh.

But the most remarkable instances have yet to be noticed.

On the 3rd of June, Major Waterfield telegraphed to me that a Swan had just been shot.

Later he wrote: "The Swan was killed on the Ojca Jheel on the 3rd of June; there were a pair, but the other flew away. The bird that I have had preserved for you measured exactly 5 feet in length and 7 feet 5 inches in expanse. The feet and legs were black; the upper mandible is reddish white; its edge, lores, and lower mandible black."

A few days later Mr. D. B. Sinclair wrote to say that he had killed another Swan, a male, on the 1st of June at the Gulabad Jheel, 12 miles north-east of Peshawur, and on the 7th July he wrote to say that there was still at least one Swan left on this same jheel.

The specimen sent by Major Waterfield proved to be a nearly mature *C. olor*, but Mr. Sinclair's bird, unfortunately imperfectly preserved, decayed so rapidly in the hot weather that then prevailed, (the temperature was over 100° Far. in the shade at 10 A.M., in Peshawur at the time) that it shortly grew a mass "to make men tremble who never weep," and though, from what was said, I believe it also to have been *olor*, I cannot be certain.

What could keep a number of Swans down in the middle of June, in one of the hottest places in India, I cannot pretend to say.

As far as I can gather, the only Swans that we are likely to meet with in India are *C. ferus*, *C. olor*, and *C. bewicki*, and it may be as well to explain how those may be discriminated.

In the first place, *C. olor* at all ages has the tail more or less wedge-shaped, pointed, and comparatively long, while the other two have the tail rounded and short, so that *olor* may be at once distinguished from the other two. In the adults, of course, *olor* is further distinguished by the large black fleshy tubercle springing from the forehead and descending on the basal portion

of the culmen which is entirely wanting in the other two species, but this tubercle is equally entirely wanting in the young of *olor*, and as it is these for the most part that we meet with in India, this point need not be further insisted on here.

The dimensions of this species, already given by Mr. Blanford and myself, will, I think, suffice for all practical purposes. To my description of the young, reproduced above from the *Ibis*, I have only to add that at a later stage those parts of the bill which I described as pale grey become dull yellow, and the feet black. In the perfect adult the plumage is very pure white, at times with a creamy or buffy tinge on head and back of upper neck, and the bill is as described by Mr. Blanford.

C. ferus and *bewicki* both have short rounded (not pointed or wedge-shaped) tails, and both have the bare space in front of the eyes yellow, and not black as in *olor*. They differ, *inter se*, amongst other things in the much superior size of *ferus*; in the color of the bills, and in *ferus* having the frontal feathers prolonged into an angle, while in *bewicki* they terminate in a semicircle.

The following are dimensions recorded of an adult male and adult female of *C. ferus* :—

Male.—Length, 60; expanse, 95; wing, 25·75; tail, 7·5; bill along culmen, including bare space on forehead, 4·25; from tip to eye, 5·16; tarsus, 4·16.

Female.—Length, 52; expanse, 85; wing, 23·5; tail, 7·5; bill as above, 4·5; to eye, 4·84; tarsus, 4·0.

The bare space on the forehead and in front of the eyes and the basal portion of the bill is yellowish; the nail and the tip^o of the bill is black, the black extending upwards as a point along the culmen to within perhaps 1·5 of the forehead, while the yellow extends forward along the sides of the upper mandible to within perhaps the same distance of the point, the two colors meeting in a slanting line on either side of the bill. Part of the base of the lower mandible and the space between the rami yellow, the rest black; the iris is brown; the feet and claws black.

The following are dimensions, &c., of a male of *C. bewicki* :—

Length, 45; expanse, 74; wing, 20·5; tarsus, 5·5; bill as above, 3·5; to eye, 4·41; tarsus, 3·75.

The females are smaller, but some males are larger than the dimensions above given, and measure nearly, if not quite, 50 in length.

In the adults in this species the greater part of the bill is black, but the bare space on the forehead and in front of the eyes is bright yellow, as is also the basal portion of the upper mandible, the color extending forwards in a curve, but not reaching the nostrils; the feet black.

In both these species the plumage of the adult is pure white, that of the head and neck being often tinged with reddish yellow. In both, the young birds have the plumage pale bluish grey; the bill dusky at the tip, and livid fleshy or reddish towards the base, and on the partially bare skin in front of the eye; and the feet reddish grey.

Much more might be said as to minor differences existing between these three species, but my object is merely to enable observers in India to discriminate them, and not to write a monographic notice of them.

A. O. H.

Further Additions to the Sindh Avifauna.

BY J. A. MURRAY.

HAVING made a collecting trip a little beyond Sehwan, I propose to give a few particulars of the result, showing some additions to the AVIFAUNA of Sindh as recorded in the Editor's lists, Vol. I., p. 148, and Vol. V., p. 328, of STRAY FEATHERS.

We were a party of three, and left Kurrachee by the evening train of the 15th November last, arriving at Jempeer, a station on the line, at about 2 A.M. on the following morning. Here we were delayed till 4 A.M., owing to our camels not being in readiness, which completely upset our plans for going some seventeen miles north of the station across a range of hills. This it was impossible to do owing to the late start, and as day broke we got to the first piece of ground covered with vegetation other than the *Euphorbia*, and this was chiefly composed of *Grewia asiatica*, *Capparis aphylla* and *Leptadenia jacquemontiana*, with here and there interspersed some tall *Acacia* trees on which were seated small companies of the large Tawny Vulture *Gyps fulvescens*, and the White-backed species *G. bengalensis*.

Partridges and Quails were numerous and were heard for miles, and Hares in plenty were seen skedadling from bush to bush. Of the *Laniidæ* there were *L. vittatus*, *erythronotus* and *lathora* busily occupied making their morning repast, while the King Crows, (*Buchanga atra*,) were flitting from bush to bush making a not unpleasant cry; this with the Larks, *Galerida cristata* and *Callendrella brachydactyla*, whose songs filled the morning air, were the first observed; *Lanius arenarius* and *Malacocircus terri-color* being later on observable as busy as the others, after a night's fast.

Getting across the bed of stream we came upon a Fox, (*Vulpes leucopus*,) which was soon brought to bag, and tied on at the back of the camel, but not without strong protest by the driver, who seemed to think it would defile his ship of the desert and himself.

The sun having now risen pretty high, and finding we had not made much progress, a suggestion to give up our first programme for Houbara shooting was discussed, and carried by a majority, including Camel-driver and Shikaree, and so we made a detour for the most likely ground, reaching it a little too early, the sun not being sufficiently hot for the Bustards to take shelter under the bushes.

A halt being called under a rather scantily-clothed Acacia, breakfast was spread and enjoyed after a morning ride. We remounted at exactly 10 o'clock, and skirting a small range of hills came upon a piece of ground profusely clothed with *Grewia* bushes, and here began real work. Separating ourselves, as was necessary, we entirely cut off any chance of escape if the birds were not anxious to get shot at; and as we narrowed the circle found ourselves in luck by the sight of five very good-sized birds. Four of these were bagged, among them two beautiful Cock birds. We hunted up the fifth, which escaped J. G.'s gun, but failed to get a sight of it, notwithstanding our climbing up and down several ragged hills.

Houbara were not abundant this season, and, strange to say, the *Grewia* berries, which they chiefly live upon, were not even ripe on their first arrival. Florican (I mean the Bastard Florican, *Sypheotides auritus*) have not at all put in an appearance this year, owing, probably, to no rain having fallen. Natives assert that as sure as the Scarlet Mite (*Trombidium tinctorium*) makes its appearance after a fall of rain in November, the Bastard Florican is as certain to follow. I cannot vouch for the last, but the Scarlet Mite has always been seen after a shower in the winter months.

Finding no more traces of Houbara, we made for a piece of water about two miles west. Here we found large shady trees with several nests of *Gyps bengalensis*, but no eggs in them.

On the water we got some Teal and *Podiceps minor*, and by one o'clock a small collection of the smaller birds. They were all species already recorded as occurring in Sindh. Having skinned some of the more valuable examples we set off on our return journey, arriving at the station at 9-30 P.M., the entire bag consisting of *Gyps bengalensis*, *Falco jaggur*, *Micronisus badius*, *Gyps fulvescens*, *Buteo feror*, *Yunx torquilla*, *Querquedula crecca*, *Pipastes arboreus*, *P. maculatus*, an Adjutant, out of whose craw we got half a dozen examples of a Lizard, *Uromastix hardwickii*,

Podiceps minor, Black and Grey Partridges and Hares and *Vulpes leucopus*.

On the morning of the 17th we strolled a few miles towards a temple situate at the back of the station, and were very pleasantly surprised at the marked change of aspect to that of the day previous. Here were seen herds of goat and sheep browsing on good pasture by the sides of the marshes formed by a natural flow of water from the limestone rocks, the sources being small fissures at the head of the hill in about thirteen different places.

Two of these are caught in a cistern built near a temple situate on the hill for the use of devotees, whose only shelter is a well-shaded Banian, (*Ficus religiosa*). Strolling a mile or so in this piece of marsh, we got *Anastomus oscitans* and *Tantalus leucocephalus*, neither of which seem to have been as yet recorded from Sindh.* Other birds got on this morning were *Pericrocotus peregrinus*, *Silvia jerdoni*, *Lobivanellus indicus*, and *Athene brama*. We returned by 9, breakfasted, and left by train for Kotree, where, having arrived at 4 P.M., a box was packed with the collection made during the three days since our departure from Kurrachee, and left for despatch to the Museum.

On the morning of the 19th we left Kotree for Sehwan by the Indus Valley Material train, making the journey in eleven hours. Any one who travels on the Sind Line of Railway cannot but be impressed with the monotonous aspect of the dry barren country through which it passes; one continuous line of desolate sterility, but the Indus Valley Line, running as it does along the river banks, would compensate the through traveller; for, as he moves onwards, leaving Kotree behind, the eye is refreshed with the verdant clothing of the river banks on one side with the river now and again appearing in the distance. On the other side pools of water by the side of the line, over which the Snippets fly as the train passes, patches of sprouting crops at the base of low hills, and the call of the Partridges, Quail, and Grouse would tempt the traveller with his gun, so long as he would only allow the range of his vision within two miles. Far, far in the distance the huge gray masses which appear unclothed with vegetation of any kind would soon dispel the illusive dream of a fine day among the Grouse, as even in November the heat among these hills is very great. By far the grandest scenery, and the most striking, is presented from the Buggatoria Hill, about seven miles from Sehwan, a huge limestone rock abutting on the Indus. As we approach it, a great barrier is presented, till the train, sweeping with a grand curve, brings to view a gorge cut in the

* Mr. S. Doig has reported both, the latter as breeding there, from the Eastern Narra.

rock not completed, outside of which, in order to carry the materials of the line through, a diversion has been carried, showing below the Government road, a village, and in full view a most grand and beautiful landscape made up by a fine stretch of the river, in all its windings, studded with numerous islets all covered with the evergreen tamarisk, the more distant ones presenting quite a lawn-like appearance. This scene, with the sun nearly set, and lighting up the town of Sehwan in the distance, formed a very enjoyable prospect, and was the talk of more than one stranger who, like myself, travelled for the first time along this portion of the line.

Sehwan was reached after sun down. We remained for the night at the station, dining, entirely upon preserved provisions, (thanks to the ingenuity of man) in less than an hour after a refreshing cold ablution. The cravings of the inner man satisfied, we set about making ourselves comfortable for the night, and were soon in the arms of Morpheus dreaming of happy events for the following day.

A tolerable night's rest in a room inhabited by a large family of *Arachnidæ* and overrun with *Formica*, large black soldiers, with heads double the size of their bodies, left us recruited for a forward journey after "*Chota Hazree*."

Riding across a sandy plain covered with *Glinus lotoides*, *Capparis appylla*, *Ærua bovi*, *Æ. lonata*, and the ever recurring *Salvadora*, we came on to the banks of the Aral and encamped for a few hours under the shade of a grove of trees made up of *Acacia sirissa*, *Ficus religiosa*, and the Neem, till arrangements were made for a stay of a few days at Sehwan. This completed, chiefly by the good offices of the Mookhtyarkar* of the station, we strolled during the afternoon along a well-kept shady road leading to the Sehwan garden, enlisting on the way the services of two beaters. We succeeded in bagging a few Black Partridges, two good specimens of *Brachypternus dilutus*, and a novelty to the Ornithology of Sindh in the shape of *Malacocercus malcolmi*.

On the following morning, 21st, we took a circuitous ramble outside of Sehwan, and in the course of a few hours made a very varied collection of birds—among them *Oriolus kundoo* and *Picus mahrattensis*. We did Sehwan in four days, adding to our collection 80 skins in all, comprising *Aquila fulvescens*, *Falco babylonicus*, *Athene brama*, *B. dilutus*, *Picus scindianus* et *mahrattensis*, *Chatarrhosa caudata*, *M. malcolmi*, *Pycnonotus pusillus*, *Emberiza striolata*, *huttoni*,

* The native local Revenue officer, equivalent to Tehsildar in Upper India, Mamlutdar in Bombay, &c.—A. O. H.

and *stewarti*, *Saxicola picata*, *monacha*, *deserti*, *Budytes flava*, *Pyrhulauda grisea*, *Bucanetes githagineus*, and a number of Waders, which are all recorded from Sindh, and which would occupy too much space to name.

On the evening of the 26th we started by boat for the Manchar, getting poled along through the shallow canal which feeds the lake. As nothing except a few Waders were observed, we settled down quietly, comfortably taking to our beds at 9 P.M. and waking up at 5 A.M. at the head of the lake to see some scores of Cormorants, quite happy in their native element, and as might be expected the Brahminy Kite, (*Haliastur indus*,) stooping on fish, and in its wake *Milvus govinda* making vain efforts to secure a like prey. Going through the lake up to Trainhee, we bagged a number of Water Hens and Coots, and a magnificent specimen of *Phenicopterus roseus*. We did not come upon any Ducks, owing, as the boatman said, to the track we were in being much frequented by fishermen and others at all times, but as we neared Trainhee they were innumerable, and we bagged several. The whole lake literally swarms with Water Fowl of all descriptions. We reached Trainhee at about 9 A.M., after four hours poling from the head of the lake. Stooping over the boat we collected a quantity of fresh water *Cerites*, and on the mud some odd valves of *Unio margaritifera*, getting perfect ones the following day, when we obtained a large variety of Ducks and Geese, but nothing new. Our next hunt was among the hills, where we got *Pterocles arenarius*, *caustus*, also a novelty in the shape of *Melophus melanicterus*. *Pyrhulauda melanauchen* and *grisea* were extremely common; also the Red Wax Bill, *Munia malabarica*, and *Pastor roseus*, from a flock of which I got *Temenuchus pagodarum*. The Crimson-Breasted Barbet, (*X. haemacephala*) we also got here. Returning, we made sad havoc among the smaller birds which we did not care to collect at Sehwan, namely *Saxicola albonigra*, *Caprimulgus asiaticus*, *Pratincola indica*, and *caprata*, *Thamnobia cambaiensis*, the Blue-throat *Cyanecula saecica*, *Edon familiaris*, *Saxicola isabellina*, and *Saxicola kingi*, and a great number of Waders.

We only remained five days on the Manchar, and our collection was greatly increased, so much so that we could find no box room for the preserved skins. On our return trip to Sehwan we got a number of Jacanas, a Pelican, *H. albicilla* and eggs, *Circus ceruginosus*, *Buteo ferox*, *Alcedo ispida*, *Halcyon smyrnensis* and *Agrodroma campestris*—altogether the collection numbering in preserved skins, from 15th November to 13th December, 270 skins.

We began our return journey from Sehwan by camel to as far as Lakki, after giving instructions in skinning and plenty of preservative to a native, the results of which will be noted

hereafter. At Lakki we were very successful among the hills, and in the small gardens close by the station we got a single specimen of *Tchitrea paradisi*, also *Hirundo erythropygia* and *Pericrocotus brevirostris*. At Buggatoria, *Graucalus macei*.

We returned to Kurrachee on 13th December 1877, and the novelties or additions to the said list including those procured in September and October, and the collections made by native collectors at Sehwan and Dowlutpoor are as follows:—

- 12.—*Falco babylonicus*,* *Gurney*. November. Sehwan.
- 74.—*Ephialtes pennatus*, *Hodgs*. Kurrachee.
- 85.—*Hirundo erythropygia*, *Sykes*. F. Pultem. November.
- 121.—*Merops apiaster*, *Lin*. Jeempeer. September and October.
- 199.—*Cuculus canorus*, *Lin*. Kurrachee. August and November.
- 261.—*Lanius cristatus*,* *Lin*. Jeempeer and Kotree. September and October.
- 259bis.—*Lanius auriculatus*, *P. L. S. Müll*. Dowlutpoor. November.
- 270.—*Graucalus macei*, *Less*. Buggatoria. December.
- 273.—*Pericrocotus brevirostris*, *Vig*. Lakki. December.
- 288.—*Muscipeta paradisi*, *Lin*. Lakki. December.
- 436.—*Malacocercus malcolmi*, *Sykes*. Sehwan. November.
- 470.—*Oriolus kundoo*, *Sykes*. Sehwan. November.
- 490ter.—*Saxicola leucomela*, *Pallas*. Dowlutpur. November.
- 495.—*Ruticilla mesoleuca*, *Ehr*. Sehwan. November.
- 553bis.—*Hypolais caligata*, *Licht*. Jeempeer. November.
- 589.—*Motacilla maderaspatensis*, *Gm*. Sehwan. November.
- 660bis.—*Corvus umbrinus*, *Hedenb. Sund*. Jacobabad. February.
- 687.—*Temenuchus pagodarum*, *Gm*. Trainhee. December.
- 720quat.—*Emberiza miliaria*, *Linn*. Dowlutpoor. December.
- 724.—*Melophus melanicterus*, *Gm*. Trainhee. December.
- 751ter.—*Linaria cannabina*, *Lin*. Dowlutpoor. November.
- 772.—*Crocopus chlorigaster*, *Bly*. Jacobabad. February.
- 938.—*Tantalus leucocephalus*, *Gm*. Jeempeer. September.
- 940.—*Anastomus oscitans*, *Bodd*. Jeempeer. September.

Amongst these are several European birds which have never before been known to occur in India, and I should like to have an opinion as to the cause of their migration so far as Sindh. Are they found in Beloochistan or Persia? If so, it is not so strange that they should occur here too.

The winter last season was very severe, and perhaps like *Cygnus olor*, obtained by Mr. Watson a few weeks after my leaving the Manchar; these strangers too were driven by stress of weather within the limits of the province.

* Already sent by Captain Butler, who has shot three or four, but not yet published.—ED.

It may be well to explain distinctly that all the novelties above mentioned, except *Crocopus chlorigaster* (which was obtained near Jacobabad by my native collector when out with the General on tour to Mitra), and those from Dowlutpoor (sent me with about 80 other skins by a native to whom I gave lessons before leaving Sehwan), were procured by myself; and although these exceptions include the five most important of the novelties (*L. auriculatus*, *S. leucomela*, *L. cannibina*, *E. miliaria*, *R. mesoleuca*), and were not collected by myself, I have every reason to be satisfied that they were really procured at Dowlutpoor, whence I received them.

I take this opportunity of noting in regard to Captain Butler's and the Editor's remarks (V., 327, 330) that I asserted that *Irena puella* was procured near Sukkur, for the simple reason that a skin of it was sent down to me along with other skins from that place. Whether it was an escaped caged bird or not, I cannot of course pretend to say. I had nothing to do with collecting the specimen. I only told the tale as it was told to me.

NOTE BY THE EDITOR.

AT Mr. Murray's request I have corrected the nomenclature throughout, and identified the species referred to in the preceding very important paper.

Not only does this paper add the very large number of twenty-four species to the Sindh list, but it adds six species to the Avifauna of India, and extends to a very considerable degree the previously known area of distribution of these.

None of these six species are included by Jerdon, and none of them have been as yet described in this periodical. These six are :—

497ter.—*Buteo mesoleuca*, Ehrenb.

This species, originally discovered near Jeddah, has subsequently been observed in Greece and Turkey, and appears to have its head-quarters in the western portions of Asia Minor. A straggler has also been obtained at Heligoland!

This species also occurs at Bushire. Major St. John obtained it there. Not knowing the species he took it for *R. hodgsoni*, which it closely resembles, and told Mr. Blanford that he had obtained this latter species there. Mr. Blanford not unreasonably pooch-pooched this surmise, and refused to record it in the account prepared by him, with Major St. John's assistance, of

the birds of Persia. Directly I showed St. John this specimen, without mentioning name or anything about it, he at once said, "This is the bird I got at Bushire that Blanford would not believe about."

The occurrence of this species at Dowlutpore near Sehwan 17° further east than Bushire, along with four other species, *Lanius auriculatus*, *Saxicola leucomela*, *Emberiza miliaria*, and *Linaria cannabina*, none of which have hitherto been observed anything nearly so far east, must naturally awaken suspicions that some mistake has occurred.

I have examined the specimen of *mesoleuca* carefully, and it is certainly not one prepared in Europe, and the same may be said of all the other specimens from Dowlutpore. They are obviously prepared by a comparatively untrained native skinner, and it would seem impossible that Mr. Murray's man, out in the jungles at Dowlutpore, could have got the specimens in any possible way, except by himself shooting and skinning them; and as he has not the slightest knowledge of ornithology, and barely knows a Crow from a Pigeon, there would seem no valid reason for doubting the occurrence of this and the other species, startling and unexpected as this is.

But is it quite certain that these specimens were amongst the Dowlutpore birds? Mr. Murray thinks so, and he may be right; but not one of these birds had a ticket, and I have ascertained that about the time he got the birds from Dowlutpore, he also had to examine a collection of birds from Bushire. And all these five birds occur at Bushire; so that it appears to me that with a lot of birds lying about without tickets, it is not impossible that these five being Bushire ones got mixed with the Dowlutpore ones, and therefore, while admitting these species provisionally to places in our list, I must warn my readers that I think their occurrence within our limits requires further confirmation.

Mr. Murray sent me this bird as *R. phœnicura*, from which it differs most conspicuously by its huge white wing spot; but Captain Butler, who is far better up in birds, pronounced it, like Major St. John, to be apparently *R. hodgsoni*, which indeed it much resembles.

As regards its differences from *R. phœnicura*, Mr. Dresser remarks:—

"The *Adult Male* differs from the male of *R. phœnicura* in having the upper parts, more especially the head, much darker; the white on the forehead more extended; the black on the throat more intense; and the entire under parts below the throat are rich orange-red—the centre of the abdomen alone being marked with white; the wings are darker and greyer,

while the secondaries have almost the whole of the outer web, from the base nearly to the tip, pure white, forming a very conspicuous white alar patch; bill and legs, black; iris, brown. Total length, about 6 inches; culmen, 0.5; wing, 3.1; tail, 2.45; tarsus, 0.82.

"The *Adult Female* differs from the female of *Ruticilla phœnicura* in having the upper parts greyer; the forehead and sides of the head dirty greyish white, the latter tinged with brownish ash; underparts much greyer and more sooty than in *R. phœnicura*; the breast only tinged with dull greyish orange.

"*Obs.*—There is, comparatively speaking, but little variation in the specimens I have examined, but the amount of white on the wing in the male varies somewhat, and in some specimens the back is very dark, and marked with black."

To *hodgsoni* it bears a much closer resemblance. It differs in having a broader and purer white frontal band than *hodgsoni*, in having rather more of the rump orange ferruginous, in having more white on the wing, the white in *hodgsoni* being confined to the tertiaries and hinder secondaries, while in *mesoleuca* it extends on to several of the primaries. The black of the throat descends much further on to the breast in *hodgsoni*, and the middle of the abdomen in *mesoleuca* is mottled with pure white. So much for the male. I have no female *mesoleuca*, but to judge from the plate of this, the female of *hodgsoni* is a darker brown above, has no pale frontal band, and is less albescent on the abdomen.

The female *Ruticilla hodgsoni* has no albescent margins to the primaries as the female of *mesoleuca* appears to have.

The following are the dimensions and description of Mr. Murray's specimen, a male:—

Length, 6.3; wing, 3.3; tail, 2.8; tarsus, 0.78; bill from forehead, 0.6.

A narrow frontal band, the lores, chin, throat, cheeks, front, and frontal half of sides of neck, black; breast, abdomen, lower tail-coverts, axillaries and greater part of wing-lining, orange ferruginous; the middle of the abdomen mottled with pure white and lower tail-coverts, paler; lower surface of the quills, delicate satin grey; a very broad white frontal band, extending backwards to the eye above the narrow black frontal band; crown, occiput, nape and entire mantle, slaty grey; rump, upper tail-coverts and tail, except two central feathers, which are more or less brown, orange ferruginous; wings, brown; tertiaries and secondaries, broadly, and more or less of the hinder primaries, narrowly, margined on their outer webs, in the case of the two former for nearly their entire length, with pure white.

259bis.—*Lanius auriculatus*, P. L. S., Müll.

This species, well figured by Buffon, P. E., pl. IX., fig. 2, and the male, at any rate, correctly described by Brisson, Orn. II., 147, as *Lanius rufus*, (a name unfortunately not allowed to stand by the British Association Rules), was confounded by Linnæus in his 12th edition with *Lanius collurio*, so that the first name available for this comparatively common European Shrike is that given by Müller in his Supplement to the Syst. Nat. Later Gmelin recognized to a certain extent the distinctness of this species, but still only admitted it as a variety.

When Messrs. Sharpe and Dresser published their article on this species in March 1871, its range was only known to them as extending to the Black Sea, but De Filippi found it in Northern Persia, and Major St. John and Mr. Blanford obtained it in hilly country at elevations of from 4,750 to 7,000 feet from June to August, at and a little to the east of Shiraz.

Its present occurrence in Western Sindh is the more remarkable, that I have not yet received it from anywhere in Beloochistan, not even from the Highlands between Khelat and Quetta, where it would have *primâ facie* have appeared more likely to occur than in the comparatively low parts of Western Sindh, whence it has now been sent.

The following are the dimensions taken from Mr. Murray's specimen, a male :—

Length, 7·75 inches ; wing, 4·0 ; tail, 3·6 ; tarsus, 0·93 ; bill from frontal bone straight to tip, 0·78.

The chin, throat, breast, and entire lower parts, a patch over the nostrils, and in front of the eye on either side, a spot above and behind each eye, the scapulars, the lower rump and upper tail-coverts, a broad band at the base of the primaries, and a narrow tipping to the tertiaries and later secondaries, the outer webs of the external tail feathers, and the bases and tips of all the tail feathers, white ; the white tipping of the central feathers almost obsolete, and traces of white tipplings to the greater wing-coverts ; the middle of the back ashy grey ; a broad band on the forehead, extending on either side across the eyes and ear-coverts, and down the sides of the neck to the interscapular region, this latter and the whole of the wings and tail, where these are not white, black ; crown, occiput and nape rich chestnut ; the lower parts, that is to say breast and abdomen, have a very slight fulvous tinge ; the axillaries are mingled grey and white, and the wing-lining (except the tips of the greater primary lower coverts which are dusky) and the basal portions of the primaries, are white.

I have compared this specimen with one from Europe ; they are identical. I have no female by me, but Macgillivray thus describes her :—

"*Female*.—The female has the upper part of the head and the hind neck dull brownish red; the black of the back tinged with brown; the rump brownish grey, transversely barred with brown; the wings and tail brownish black, with the white markings less extended and tinged with brown; the band on the side of the head is brown; and the lower parts are greyish white; the sides tinged with brown; the fore-neck and breast marked with faint semi-circular brown lines, of which there are two on each feather."

Messrs. Sharpe and Dresser say :—

"*Female*.—Similar to the male, but has all the colours less bright, and the forehead, and the parts generally of the body which in the male are black, dull blackish brown with an admixture of rufous.

Young.—Brown above, inclining to rufous on the head and back, transversely barred with ochre and black vermiculations; scapularies and rump paler and more fulvous; the bars broader; wing-coverts black, broadly edged with rufous and washed, especially on the least coverts, with ochre; tail brownish black; the middle feathers tipped with rufous, the others with fulvous white, especially on the outermost, which has a little black only on the inner web; underneath fulvous, thickly barred over the whole body with narrow brown vermiculations; chin and under wing-coverts white; under tail-coverts rather deep fulvous."

490 *ter*.—*Saxicola leucomela*, *Pall*.

It will be remembered that in their monograph of the genus *Saxicola*, P. Z. S., 1874, 225, Messrs. Blanford and Dresser somewhat doubtfully identified *Saxicola capistrata*, Gould, B of A., Pt. XVII., pl. 9, with *leucomela* of Pallas. The objections to this seemed to be that this species (*leucomela*) was not known to occur in India, whereas the bird identified by them as *S. morio* was common in the upper parts of the Punjab and Afghanistan, and that on the whole, though the color of the under tail-coverts, as represented by Mr. Gould, was rather more yellow than is ever seen in *morio*, the plate suits this latter species better than *leucomela*, especially in absolutely wanting the narrow white tips to the secondaries which are always present in *leucomela*.

Referring back to Mr. Gould's remarks, I gather that he must have figured specimens from Sindh. He says :—

"Among the MS. notes on Indian birds by the late Captain Boys, I find the following in reference to the present species."

Now, if Mr. Gould had not had Captain Boys' specimens before him, he could not have known to what species Boys was

really referring, as he was not much of an ornithologist. Captain Boys' remarks were as follows:—

“Shot several specimens on the road to Sukkur, at a place called Mhuta-jeedo, and met with others at nearly every stage lower down towards Sukkur.”

It is, therefore, nearly certain that Mr. Gould figured some of these Sukkur specimens, and the occurrence now of *leucomela* in Sindh, not so very far from Sukkur, and the color of the under tail-coverts, as shown in the plate, renders it extremely probable that these specimens were really *leucomela* also, or if not *leucomela*, at any rate a very nearly-allied species, and not *morio*. I say very nearly allied because I notice that Mr. Gould says that his bird has a broader band of black on the tips of the lateral tail feathers than true *leucomela*, and comparing now the Sindh bird, and one from Shiraz with another from Egypt, I notice that, as a matter of fact, both the former have very much broader black tips to the feathers mentioned than the Egyptian specimen. I also notice, as insisted on by Mr. Gould, that they are larger birds, both having the wings 3·8 against barely 3·5 in the Egyptian bird.

The very few specimens available to me prevent my offering any opinion as to whether these, and some other slight differences which I observe, are constant and worthy of specific recognition; I merely note the point for future investigation.

This species had been found by De Filippi in the neighbourhood of Teheran, and was obtained by St. John at Shiraz; but the most easterly point at which it had hitherto been observed was by Mr. Blanford at Rayin, S.S.E. of Kerman, at an elevation of about 9,000 feet in May, in about 58° E. Long. Its occurrence now in nearly 68° E. Long., and if I am correct about Captain Boys' specimens in fully 69° E. Long. greatly extends the South-Eastern range of this species.

I have already, S. F., I., 185, pointed out some of the differences between this species, and what Messrs. Blanford and Dresser identify as *morio* (olim *S. capistrata*, Gould *apud nos.*); but in the comparison I then made I referred to Egyptian specimens of the species. Comparing Sindh and Persian specimens I find that the size is as nearly as possible the same, but that the bills in *leucomela* are a trifle slenderer.

The main points of distinction are, that the under tail-coverts in *leucomela* are (in the Sindh and Persian specimens they are much paler in the Egyptian bird) a distinct though pale russet, while in *morio* they are never more than pale fulvous. The secondaries in *leucomela* are narrowly tipped with pure white—which is not the case in *morio*. A considerable portion of the inner webs of all the quills on their lower surface

is pure white in *leucomela*, whereas in *morio* the lower surface of all the quills is of one uniform color, varying from a grey brown to a greyish dusky. Apparently in summer the crown, occiput, and nape are nearly pure white, whereas in winter they are almost entirely overlaid with fawny brown. It may be useful to quote for future reference Messrs. Dresser and Blanford's full description of this species.

"*Adult male*.—Crown and nape white, the former strongly tinged with brownish grey; back, scapulars, throat to the upper part of the breast, sides of the head and neck, including a narrow line above the eye, upper parts of the flanks, under wing-coverts, and axillaries glossy jet-black; wings duller black than the back; secondaries narrowly tipped with whitish; rump and upper tail-coverts pure white; tail as in *S. morio*, but narrowly tipped with white; breast and abdomen pure white; crissum and under tail-coverts pale rufous; bill and legs black; iris dark brown. Culmen, 0·7 : wing, 3·8; tail, 2·75; tarsus, 1·05.

Female.—Similar to the male."

660 *bis*.—*Corvus umbrinus*, *Hedenb. Sund.*

The occurrence of this species in Sindh, of which I previously had no specimen to compare, enables me to confirm the statement made in a former article (*supra* p. 64) that my *Corvus lawrencii* is not in the least like *umbrinus*.

C. umbrinus is a smaller bird, with much smaller bill, feet, and legs, and it has the whole of the head and neck all round, and upper breast overlaid with a strong bronzy-brown tint, which renders it impossible to mistake it or confound it with any of the Black Crows of this part of the world.

The following are the dimensions of the bird from Jacobabad, which is a very fine specimen, and obviously an old adult:—

Length, 21·5 (against 23 to 24·75 in *lawrencii*); wing, 15·75 (against 16·3 to 17·4 in *lawrencii*); bill at front from junction of frontal feathers and bristles, 2·25 (against 2·55 to 2·75 in *lawrencii*); tail, 9·0, (against 10 to 10·5 in *lawrencii*); tarsus, 2·6 (against 2·8 in *lawrencii*, the tarsi being very nearly double as massive in the latter); hind toe and claw, 1·65 (against 1·8 in *lawrencii*).

This species has hitherto been known from North-East Africa, Palestine, and Beloochistan, about as far east as the 62° East Long. I observed it nowhere between Kurrachee and Gwader, and specimens sent me thence have been *lawrencii*. Its present discovery at Jacobabad, and about this species there is no doubt, extends its range to nearly the 69° East Long.

The following is Dresser's detailed description of the species :—

“Adult male.—Head and neck glossy dark umber-brown ; feathers on the neck white at the base ; upper and under parts generally jet black with a steely violet gloss ; the under parts intermixed here and there with a few dark umber-brown feathers ; wings and tail glossy black, with a violet-blue gloss ; bill black ; legs black, with a brownish tinge ; iris dark brown. Total length about 23 inches ; culmen, 2·9 ; wing, 15·5 ; tail, 8·6 ; tarsus, 2·9 ; middle toe, 2·2.

Female.—Similar to the male.”

720 *quat.*—*Emberiza miliaria*, *Lin.*

This is another species which I have not yet received from Beloochistan. It occurs all over Europe, North-Eastern Africa, Palestine, Turkestan, and De Filippi recorded it as common in the north-west of Persia, but it has not hitherto been procured further east than at Shiraz and Abadeb, both in about 53° East Long. Its present capture at Dowlutpore, if authentic, extends its range nearly 15° to the east.

I have compared the Sindh specimen with European ones ; it is quite as dark as most of the English birds ; it only differs in appearing to have the dark spots of the sides and base of the throat darker and more confluent than any of the European specimens. It measures :—

Length, 7·5 inches ; tail, 3·3 ; wing, 3·9 ; tarsus, 1·0 ; bill from gape, 0·6.

The bird is such a well known European one, that it is unnecessary to do more here than reproduce Mr. Dresser's description of the species :—

“Male in spring plumage.—Above greyish brown, the feathers blackish down the centre as in a Lark, those on the crown more narrowly centred ; the rump almost entirely greyish brown, with very faint indications of central black markings ; scapulars and wing-coverts like the back ; the median coverts tipped with white, and also slightly tinged with rufous ; the greater coverts externally edged with fulvous ; quills blackish brown, externally margined with buffy white ; the secondaries far more broadly, these latter being also slightly tinged with rufous ; tail rather paler brown, with edges and tips of buffy white ; feathers in front of the eye, and an indistinct eyebrow buffy white, with very tiny longitudinal markings of dark brown ; ear-coverts dark brown, with narrow streaks of black ; under surface of the body creamy white ; the throat and fore part of the chest streaked with small spots of blackish brown these spots being very tiny on the throat, where they collect thickly together on the malar line, forming a kind of

moustachial streak; on the chest the spots are slightly more triangular, but on the lower part of the breast they take the form of narrow lines; flanks slightly rufescent, and strongly washed with brown, being at the same time distinctly striped with dark brown; under tail-coverts buffy white, with slight central streaks of brown; under wing-coverts of the same colour, varied down the centre of each feather with greyish; bill horn colour, with a slight dash of red; the edge of the upper mandible and the whole of the lower one yellow; feet pale fleshy brown; iris dark brown. Total length, 7 inches; culmen, 0.52; tail, 3.1; tarsus, 1.0.

"*Obs.*—A great deal of difference is observable in Buntings killed in the spring and summer, some being almost pure white underneath, with very few and indistinct stripes on the breast, the general shade of the plumage being a pale greyish brown; others, on the other hand, are very thickly spotted on the under surface of the body. English examples are slightly darker than the Continental birds, the pale-coloured ones in our collection being from Smyrna and Turkestan, so that, perhaps, this peculiar variation is confined to the eastern specimens.

"*Young.*—Much darker than the adult, and more ochreous-brown, with a very strong tinge of ochre on the breast; the markings on the latter more confused, and not nearly so distinct as in the adult."

751 *ter.*—*Linaria cannabina*, *Lin.*

The Linnet, if Mr. Murray's discovery is to be relied on, receives an equal extension of its area of distribution to the Common Bunting. Hitherto known as generally distributed throughout Europe and in winter in Northern Africa, extending westwards to the Canaries, and Madeira, and eastwards as far as Turkestan, it had not been previously observed any where south of the Caspian, further east than Shiraz.

The specimen obtained is an adult male, but there is very little red on the head, and that on the breast is considerably duller than in the summer plumage. It is absolutely identical, so far as plumage is concerned, with European specimens with which I have compared it. It measures:—

Length, 5.8; wing, 3.1; tail, 2.3; tarsus, 0.62; bill from forehead, 0.5.

This is rather longer than European specimens, and Blanford has already remarked that some Persian specimens have a rather long bill. I reproduce for reference Dresser's full description:—

"*Adult male in summer.*—Forehead blood red; crown, hind neck, and sides of the neck otherwise brownish grey; the hind

crown with darker striations, and the region immediately round the eye brownish white; back, rump, scapulars, and wing-coverts warm chestnut-brown; the feathers with slightly darker centres; rump lighter and slightly varied with white; upper tail-coverts blackish brown, with broad whitish margins; quills blackish; the primaries margined on the outer web from the base to nearly the tip with white, these margins being very narrow on the outer quills, and much broader on the inner ones; secondaries slightly tipped with white; the inner secondaries like the back, but darker and browner; chin and throat dull white, striped with greyish brown; breast rich carmine red; rest of the under parts white; the flanks washed with brown; beak horn, the under mandible at the base brown; legs pale reddish brown; iris brown. Total length about $5\frac{1}{2}$ -6 inches; culmen, 0.45; wing, 3.15; tail, 2.0; tarsus, 0.7.

“*Adult female*—Resembles the male, but lacks the red on the forehead and on the breast; the upper parts are browner and more striped; the breast and flanks are striped with dark brown, and the white edgings to the primaries are less developed.

“*Adult male in winter*.—The plumage is a trifle duller than in the summer, and the red on the crown and breast is much paler and obscured by light edgings to the feathers, which, however, wear off in the spring, and permit the full richness of the red to be exhibited. It is not always that the male loses his rich red breast and head in the winter, and I should think that it is retained by the very old males. We frequently see here in England males in the late autumn with the red richly developed; and Mr. Godman remarks that in the Canaries and at Madeira, the Linnets retain the red in the plumage all the year round.

“*Young of the year*.—Resembles the female, but has both the upper and under parts much more distinctly striped with dark brown.

“*Obs.*—So far as I can ascertain, it is long before the male attains the full beauty of its plumage. After the first moult the young male has the breast red, though not to any great extent; but it takes much longer before it assumes the red on the forehead, and before the red on the breast attains its full brilliancy; and instances are cited by several authors of the male breeding before it has attained its full dress. When in confinement, so soon as it moults, it loses the red, which is then replaced by yellow; and sometimes wild birds are obtained which have the breast and forehead orange yellow, instead of red, probably owing to some want of vigour.”

A. O. H.

Notes on Nomenclature, III.*

At page 138 of Vol. V., I expressed an opinion that Mr. Elliot was in error in uniting *Pucrasia castanea*, Gould, with *P. duvauceli*, Tem., and I showed, as I submit conclusively, that Temminck's *description* could not apply to *castanea*, but must apply to *macrolopha*.

In reply Mr. Elliot says, *Ibis*, 1878, p. 125 :

"The third and last criticism of Mr. Hume is on the error I committed (in his opinion) in uniting the *Pucrasia castanea*, Gould, with *P. duvauceli*, Tem. Now, before replying to this, it will first be necessary for me to say a few words about the last-named species, which, from his remarks, I should judge to be entirely unknown to Mr. Hume. He says Prêtre's drawing in the 'Planches Coloriées' is a 'vile thing, a wretched picture,' and that, 'barring the tail, it is equally unlike every species of the genus' (quite true), and condemns it *in toto*, so far as I can see, because it does not resemble *P. macrolopha*. Now I would state, in justice to Prêtre, that, although his drawing does not equal one of Mr. Wolf's, yet it is a very faithful representation of *P. duvauceli*, Tem. I have no hesitation in saying this; for I am perfectly conversant with his type (the original of the plate in the 'Planches Coloriées'), as the specimen is still, and always has been I believe, here in the Paris Museum; and it was by means of this example and the type of *P. castanea* (which I purchased from Mr. Gould, and which is now in the Zoological Museum at Stuttgart) that I became aware that the two were the same species, and consequently placed Mr. Gould's bird among the synonyms of *P. duvauceli*. From their appearance and general mode of coloration, we are fairly entitled to believe that *P. duvauceli* and *P. macrolopha* are as thoroughly distinct species as any that are to be found in the Phasianidæ. Besides the chestnut on the back and sides of the neck, the flank feathers, perfectly exhibited in the plate in my work, differ entirely from any I have ever seen in any specimen of *P. macrolopha*; and I have examined a great many. Mr. Gould's plate does not show these correctly; the chestnut colouring is exaggerated in its extent, and the black feathers, with their light edges, are almost entirely suppressed, a few only showing just above the leg. Temminck's text, it is true, does not describe his plate accurately, but leans more to *P. macrolopha*, but as he says 'La gravure ayant été

faite depuis longtemps, même avant la publication des deux ouvrages anglais où se trouvent de très-bonnes figures de notre oiseau.' It is most probable that when he wrote his description he took it from an example of *P. macrolopha*, instead of from the specimen figured which was in the Paris Museum, and which he may not have seen for a long time, and was confounded in his mind with the newly-figured *P. macrolopha*."

Virtually therefore it comes to this: Temminck figured *castanea*, (that the type proves), but he described *macrolopha*.

Now this opens up a wide question.

First.—In fixing a name, are we to abide by an author's description or figure, when these refer to distinct species?

I say (where the figure is by an artist, and not by the author of the name) most certainly by the description, which is the name-giver's own work, while the figure is the work of another person.

Second.—Where a description is such that it does not agree with the species, to which the name it defines is applied or proposed to be applied, can the name be saved by referring to the type and showing that, though the description was erroneous, yet the name was really applied to the given species?

I say no, except under two special conditions:—

1st.—That the name that would otherwise have been rejected, has by long use acquired a scientific fixity:

2nd.—That the name that would otherwise supersede it shall have been assigned by the same authority who bestowed the incorrectly-defined name.

Unless both these conditions exist, no reference to a type should be allowed to save a name founded on a description which is *distinctly at variance* with the species to which the name was (or is supposed to have been) intended to apply.

Even for saving the name under these peculiar and necessarily rare conditions, I have no warrant, and I would not for a moment insist on them. I merely suggest them to brother ornithologists as a possible and not unreasonable or illogical relaxation of the general rule, which is, broadly, that names not properly defined or indicated must be rejected.

But though this is the Code rule, as a matter of fact even English ornithologists seem now too generally to hold that no matter, how erroneous a description is, you have only to hunt out the type to establish the name.

To my mind this is illogical. A and B both give names to given species, and describe these, not only imperfectly, that is nothing, but distinctly wrongly on a material point; why should A's name be discarded and B's retained, simply because while A's type has perished B's is still preserved?

I do not see it; but still if ornithologists or naturalists generally approve this, let it be so. Only let us have a definite rule to that effect, and do not let us profess to go by the Code, when we do nothing of the kind.

It seems to me that in the matter of our nomenclature we are getting into much the same fix at which we *have* arrived in regard to our religion.

The Scripture, read to us weekly in church as our guide in life, tells us to sell all we have and give to the poor. The experience of life teaches us that to do this would in ten generations reduce us to the level of savages, that the accumulation of capital is essential to all physical and scientific progress, &c., &c., and in practice we *don't* sell all we possess, (if we can help it) even to give to the poor.

If we impartially survey the existing aspect of religious feeling, we shall find that no one thing has operated more powerfully to confuse the minds of the majority and shake their hold upon the vital truths that (though in widely different degrees of development) underlie all forms of belief amongst civilized men, than the startling divergencies that exist between religious precept and religious practice as *aimed at* and *approved* by the best and wisest.

It is the old story—better no law, than laws that have become dead letters.

Now "*non aliter, si parva licet componere magnis*," do matters stand with our ornithological nomenclature. We have a Code clear and distinct enough on most points, and the priests of our sanctuary are never slothful in preaching it to us, while at the same time their practice is moulded on widely different rules, and it is this divergence more than anything else that has plunged the ornithological nomenclature of even British ornithologists into its existing state of confusion.

We all profess to abide by the Code, but each makes his own gloss on the rules, and amplifies or modifies as seems best to him—reproves his neighbours for a disregard of Code rules, when that disregard eventuates in a nomenclature different from his own, but at the same time boldly transgresses the rules, whenever such transgression chimes in with his own predilections.

With their traditions our ornithologists make the Code of no avail, and on no point is this more conspicuous than in the generally-received practice of going back to types, to prove that incorrect descriptions that ought to be under the Code, rejected and set aside for good and all, really referred to a given species.

There is nothing in the Code about this, and either the practice should be disallowed or the Code altered by a congress of

distinguished naturalists, such as originally compiled, and again, later, revised the Code.

The Code, admirable as a first evolution of system out of chaos, has naturally in practice proved insufficient for all the varied and complicated combinations of conditions that arise, and is moreover in the opinion of many great Continental and American naturalists, distinctly in error in some points, *e.g.*, in the rejection of not a little truly binomial nomenclature such as Brünnich's, and much of Brisson's.

Surely the time has come for the revision of the Code, in the light of the further experience of the past thirty years, and its re-enactment on a broader basis.

From private correspondence I am led to believe that many eminent Continental and American ornithologists would willingly waive points that they now insist on if we would meet them half way, for the sake of securing a generally-received Code, which would ensure uniformity of specific nomenclature in the great mass at any rate of new standard ornithological works and periodicals.

I am informed by a gentleman, thoroughly competent to offer such an opinion (which I myself am in no position to verify) that there are fully 8,000 species of birds, of which the proper specific names, according to any system that might be definitely decided on, could be settled once and for all without difficulty.

Of course, with such a list once published with the requisite (it need not be exhaustive) synonyms, and accepted by the ornithological leaders, not of Great Britain only but of Europe and America, all the time, and printing now wasted over the synonyms of these 8,000 species might be saved for real ornithological work.

How great and terrible that waste is, every one who has even dabbled in this finiken, frivolous, but alas as matters now stand, almost inevitable branch of our work will freely admit, but the great tendency that this has to absorb the attention, and divert to mere words the energies and talents that should be devoted to facts is even more lamentable, though much less generally acknowledged and realized.

Surely the time has come for a strenuous and combined effort on the part of all who love science unselfishly, and for her own sake to confine this great and growing evil within the narrowest possible limits. Surely the time has come, not merely for a revised *British* Code, but for a new Code, universal as are the aims and blessings of science herself.

Science will have to leaven the whole mass of mankind ere these, now wholly absorbed in the ephemeral pursuits of the day, selfish money grubbing or position grasping, (thinly

veiled under the euphueisms, business or politics) will cease to cherish national jealousies and prejudices, but in the world of science far removed above the din of warning selfishness, whether individual or national, the touch of truth should make the whole world kin, and the whole universe fatherland.

This is but a poor little insignificant thing, this proposed International Code of Ornithological Nomenclature, but still it would be a step, however small, in the direction to which all our efforts should tend, and it is one that I have reason to believe now feasible. Will none of our great ornithologists at home make the attempt and set the matter on foot?

A. O. H.

On an overlooked species of *Reguloides*.

By W. EDWIN BROOKS, C.E.

ON several occasions, when my friend Mr. Mandelli sent me examples of *Reguloides superciliosus* from Darjeeling, I was struck with their very bright coloration. I had often obtained fresh autumnal examples in the plains of the North-West Provinces of India, but they were all much duller in tone. I observed that the colour of the supercilium, and of the head generally, differed. The supercilium being in the one case brownish white or exceedingly pale brown, and in the other pale yellow. The same difference existed in the colour of the cheeks, a pale brownish colour against greenish white, more or less tinged with yellow in the other bird. I did not then consider what such variation implied.

Two or three weeks ago another friend, the Editor of this journal, sent me three examples shot at Shillong in October last. These were in beautiful fresh autumnal plumage. In addition to the greenish yellow supercilium and the pale yellowish cheeks, there was a blackish olive band on each side of the head, which expanded laterally towards the nape of the neck, where they united, forming a sort of dusky narrow half collar, most distinctly and abruptly separated from the olive green of the back. Down the centre of the crown was a greenish grey coronal streak, very much more marked than seen in North-West examples. This head coloration, i.e., the dark lateral bands, much resembled that of *Reguloides occipitalis* or *R. trochiloides*. The other two examples did not show this peculiar head coloration so strongly, and they were not quite so bright in plumage. I have the same bird shot near Howrah in January, and I have seen others in the Indian

Museum obtained near Calcutta. *These all showed that the fine dark markings of the head fade very rapidly.*

This appearance of the head, coupled with the bright plumage of the birds, led Mr. Hume to think he had got a new *Reguloides*; but this is not the case, I think, and the brown-headed bird of the North-West, hitherto standing unchallenged as *Reguloides superciliosus*, is the new bird, if new it can be called, and at any rate the one which is now in want of a name.

The brightest North-West example I ever obtained, I sent to Mr. Dresser; and it is referred to in *Birds of Europe*.

I shall quote the entire description of the species from Mr. Dresser's work:—

Reguloides superciliosus.

"*Adult male in breeding plumage* (Lake Baikal, May 22nd.) Crown, nape, back, and scapulars greyish olive; rump and upper tail-coverts washed with green; wings dull dark brown; all the quills, except the inner secondaries, edged with yellowish green on the outer web; inner secondaries slightly, and larger and median wing-coverts broadly, tipped with white, slightly shaded with sulphur yellow; rectrices dull dark brown, narrowly edged on the outer web with pale yellowish green; sides of the face white, intermixed with greyish olive; from the base of the bill over the eye to the nape, a tolerably broad dirty white stripe; underparts including chin and throat white, on the flanks washed with greenish grey; bill dark brown; iris dark brown; legs light brown. Total length about $3\frac{1}{2}$ inches; culmen, 0.45; wing, 2.1; tail, 1.7; tarsus, 0.7; first primary short, but 0.25 longer than the wing-coverts and 0.9 shorter than the second, which is 0.3 less than the third; third and fourth about equal, being the longest.

"*Adult male in autumn* (Darasun, 29th August) differs from the above-described bird in having the upper parts very much greener, the tips to the wing-coverts and secondaries, and the stripe over the eye (which latter is large and clearly developed) being bright sulphur yellow instead of white; flanks washed with pale greenish yellow, with but little trace of grey. A specimen shot by Mr. W. E. Brooks, of Etawah, on the 16th October, has the upper parts duller than the bird killed in August above described; the margins to the wing-coverts and secondaries are dull yellowish buff; *the superciliary stripe is yellowish buff; and the flanks and breast are washed with pale buff with a yellowish tinge.*

"*Female*.—Similar to the male, but a trifle duller in colour."

I have given in italics the part of the above description relating to the Etawah bird, that I wish to be noted. I have not seen a brighter-coloured specimen of the North-West bird.

In the summer, these little birds lose the yellow, and often the green colour, very much indeed. It does not take long for a yellow supercilium to fade to dull white. To be described and compared correctly, all these birds should be dealt with in early autumnal plumage. Those of brightest plumage are the young in their first plumage. Most of us know that the Willow Wren, after its first moult, is never so yellow again; in fact it can only be called a yellow bird before the moult.

I have shot hundreds of *Reguloides* in the plains of the North-West, but I never once obtained one answering to Mr. Dresser's description, except so much of it as refers to my bird. Anything like the fine Shillong birds I never saw there. I have also looked over the collections of friends from the North-West, but all were what I shall distinguish as the brown-headed bird. Take the head of *Phylloscopus rufus* (*P. collybita*) or of *P. tristis*, and you have a head not unlike that of our North-West *Reguloides*, except that these have no coronal streak. The eyebrow and cheek or side of face are not those of *Reguloides superciliosus*, the Shillong and Sikhim bird. The original description of the bird is:—

"61. Yellow-browed Warbler.

Description.—Above, greenish; beneath, pale coloured; on the crown of the head a pale streak; over the eye a stripe of yellow. Inhabits Russia."*

"Yellow-browed Warbler, *Lath. Syn.*, II, p. 409, n. 16. Habitat in Russia. Penant: From G. F. Gmelin's *systema naturæ, Lepsia*, 1788, page 975.

This description suits the Sikhim and Shillong bird, also Mr. Dresser's Russian birds and those of Lower Bengal, but it does not suit the brown-headed bird of the North-West in any stage, from September to June. I have a couple of birds shot near Calcutta by myself in January last, and it is very easy to see that they are identical with the fine Shillong examples, though a good deal faded. But these birds vary much in brilliancy even in new feather.

I shall now briefly note the points of difference:—

1. The supercilium, lemon coloured or yellow in one, (*superciliosus*), and brownish white or pale rufous buff in the other. In each case the supercilium would fade to what Mr. Dresser calls dirty white.

2. Greenish white cheeks, or sides of face more or less tinged with yellow (in *superciliosus*) against the brownish cheek of the other bird. In each case the cheek is minutely mottled

* Mr. Penant: From "A General Synopsis of Birds," by John Latham, M.D., Vol. II, part 2nd, page 459. On this is founded Gmelin's *Motacilla superciliosa*; thus described: 120—*Motacilla superciliosa*, M. supra virescens, subtus pallida, verticis stria pallida, supercilliis flavis."

with brown. We have in both these points cool coloration against one inclined to warm.

3. The peculiar dark lateral bands on the side of the head of the Eastern bird, and the well-defined greenish grey coronal streak, also the lateral expansion of this dark colour at the nape, forming a narrow half-collar. No such appearance ever being visible in the North-West bird, the head of which is a plain olive brown, often more brown than olive, blended into the colour of the back, and having the coronal streak very faintly defined, often not visible.

This difference of crown of head is alone, to my mind, conclusive.

4. The very superior greenness of the back, wings, and tail of the Eastern bird or *Reguloides superciliosus*.

5. The brighter yellow of tips to greater coverts in *R. superciliosus*; in fact, wherever both birds are yellow, that of *R. superciliosus* is much purer.

I remember seeing last year the English-killed example of *R. superciliosus*, in the Museum of my friend John Hancock. This is identical with my Calcutta birds, and has the pale lemon-coloured supercilium and the generally greenish head.

It appears first to have occurred to Mr. A. O. Hume that we had two distinct birds under the one name; so with his permission I propose calling the North-West bird

Reguloides humei, the Brown-headed or Hume's *Reguloides*.

Like *R. superciliosus*, but has the supercilium pale brownish buff to brownish white, as in *P. tristis*; cheeks strongly tinged with pale ruddy buff, and seldom having an admixture of yellow; they are mottled as in the affined species with dark brown; top of head, brown, rather inclined to olive; coronal streak very faint, often not visible; colour of top of head at all times blended into colour of back; back wings and tail as in *superciliosus*, but of less bright green, and yellow tips to wing-coverts not so pure; in other respects the plumage much resembles that of *superciliosus*.

An examination of a series of Siberian and Russian examples would be interesting, to show whether both birds have a similar migratory range. Perhaps *R. humei* does not go north of the Himalayas and ranges adjacent to them. The Chinese bird will be *R. superciliosus* most probably.

The separation of this *Reguloides* will, I know, be questioned by European ornithologists; especially by those who follow Darwin and believe in the mutability of species; but all I can say is, let any one who likes try and prove identity in the present case with the facts that I have pointed out before

him. A mere opinion won't do. He must satisfactorily dispose of all the facts noted in this paper. I was extremely puzzled by Mandelli never sending me a bird that corresponded with my brown-headed North-West ones, but now the reason is clear. His *R. proregulus*, on the other hand, agreed perfectly with North-West Himalayan examples, which to my mind disposes of Mr. Hume's argument as to the habitual greater intensity of colouring in individuals obtained in moister localities. The exact geographical distribution of the two closely-affined *Reguloides* is an interesting question, and of this we may know more hereafter.

Although the two birds are close to each other in general appearance, the three *Erythrostera*—*parva*, *albicilla*, and *hyperythra*—are even closer. I could cite many other species with slighter differences than those existing between the two *Reguloides* under consideration.

I have heard the call note of each, and I cannot say they are different: but we have apparent identity of note in many species where there is the most marked distinction. A distinct note is, however, conclusive.

Since the above paper was written I have examined a selection of the two birds from Mr. Hume's museum.

As regards darkness of head, *R. superciliosus*, or the greener bird, is very variable, some having the top of the head green without any blackish markings. It is most probable that the very green and yellow birds, without the dark *trochiloides*-like head coloration, are those in first or nestling plumage, and that the dark colour is not acquired till after the first moult. The converse of this would hardly be likely. I know that young Willow Wrens (*P. trochilus*) are of lighter tone, and immeasurably more yellow than the old birds. In fact, the old bird cannot be called yellow in comparison. This rule is, I believe, pretty general as regards these little birds; and *R. superciliosus*, in spite of its wing bars, is wonderfully close to *P. trochilus*. They are both Willow Wrens, and have similar call-notes, nests, and eggs.

The upper figure on the plate of *R. superciliosus* in Mr. Dresser's "Birds of Europe," shot at Darasun, 29th August, I take to be a nestling bird in first brilliant green and yellow plumage. It precisely agrees with Mr. Hume's specimen procured at Mergui in Tenasserim, on the 6th November 1874. On the other hand, the lower figure of the plate is well represented by some of the January Burmese examples of the old bird, somewhat faded. I don't think much, if any, of the blackish olive head coloration would be left by the middle of summer. Traces of it are visible on two birds I shot near Calcutta about Christmas time last year. I decidedly think that these dark-headed birds are the old ones after their autumnal moult; and

the young would probably acquire this plumage in the early spring moult. I have shot great numbers of *Reguloides* and *Phylloscopi* undergoing a spring moult. I am not sure whether quill and tail feathers are then changed; certainly the body feathers are, including the wing-coverts.

Sylvine birds, with a spotted nestling plumage, moult the first autumn, and whether they undergo a spring moult again I don't know; but I have shot Stone Chats moulting in March. I am pretty sure the migratory *Phylloscopi* and *Reguloides* do not undergo an autumnal moult in the year that they are hatched. I once brought up a young *P. trochilus* from the nest, which a cat had found out; she had eaten two of them. This little bird was as usual very yellow; and when the time for migrating had come, there was not the slightest signs of a moult, but it was in perfect plumage. It had become so tame that I had great difficulty in losing the little bird amongst some bushes where I turned him off. When he appeared busy catching insects and searching the leaves, I ran off, only to find him on my shoulder again before I had gone a hundred yards. At last I avoided him, and I hope he lived to acquire mature plumage. He had abundance of insect food, and used to clear the window panes of flies in a very short time every day. When satisfied he would go to rest on my shoulder, and stay there till I replaced him in his cage. I mention this to show that he was well fed, and that the moult was not retarded for want of good food.

It is not always easy to separate the young birds of *R. humei* from those of *R. superciliosus*; for the former then has its maximum amount of green and yellow, still some of the tawny or rufous tone can always be found about the head or neck enough to separate the bird; but let the mature plumage once be acquired, and all difficulty vanishes, and the two birds are then very easy to deal with, for they are most pronounced.

R. humei varies much as regards rufous tone; some birds having this colour much more pronounced than others. Similarly, with regard to dark head markings of *R. superciliosus*, there is great individual variation, to such an extent as to lead to the idea that the very dark *lugubris*-like ones were another, and a third bird, but I think this can hardly be the case. European ornithologists, who have seen much of this little bird, may be able to throw further light on the subject.

Mr. Hume sent me one of the birds I shot off the nest in Cashmere. There were four eggs which I marked with a small cross. The bird is decidedly *R. humei*. A Cashmere example, procured in Cashmere by Doctor Jerdon in 1867, is also the same species.

AT MR. BROOKS' request I append a note to this paper. Most certainly the two birds differ conspicuously in appearance, and most certainly their geographical range is distinct. I have a very large series, no less than 120 specimens, now before me killed at various seasons of the year, from the latter part of August to the end of May. The very brightest and greenest specimens of the North-West bird killed at the end of September or very early in October, are clearly browner, and less green than, and have a different tint of colouring to, any that I have seen of the Eastern bird.

In going through even a large series like mine, I have not found the smallest difficulty in separating the two forms.

The following are *lists* of the specimens before me.

1st.—Of the brown-headed species *R. humei*, Brooks.

Murree; 3 specimens; 10th September to 26th October.

Pir Punjal, Cashmere; 1 specimen; 12th May.

Gulmerg, Cashmere; 4 specimens; 26th May, 6th June.

Dharumsala; 2 specimens; April, May.

Simla; 1 specimen; October.

Mussoorie; 2 specimens; September and October.

*Middle range of Hills, north of Mussoorie; 1 specimen.

Delhi; 7 specimens; October, November.

Sambhur; 1 specimen; November.

Futtehgurh; 6 specimens; October, November.

Etawah; 37 specimens; August, September, October, November, January, February, and March.

Cawnpoor; 17 specimens; October, November, February and March.

Mogul Serai; 1 specimen; November.

Dinapoor; 3 specimens; November.

Durgapur; 1 specimen; November.

Saugor; 10 specimens; October, November, December, January, February and March.

Raipoor; 1 specimen; March.

Sumbhalpore; 2 specimens; December.

2nd.—Of the greener bird, *R. superciliosus*, Gm. *apud* Brooks.

Darjeeling; 2 specimens; January.

Howrah; 2 specimens; December.

Syriam, near Rangoon; 1 specimen; January.

Thatone, Tenasserim; 1 specimen; December.

Mooleyit „ 2 specimens; February.

Salween Dist. „ 1 specimen.

Kaukaryit, Houngh-Thraw River; 2 specimens; January.

Topee, Tenasserim; 1 specimen; January.

Amherst „ 1 specimen; January.

* Since this was written a large series received from the *Valley* of Nepal, all prove to belong to the brown-headed form.

Mergui, Tenasserim ; 1 specimen ; November.

Shillong, Assam ; 3 specimens ; October.

All Brooks' breeding birds from Cashmere belong to the brown-headed race. If the birds are distinct, then all his eggs belong to that, and not to the true *superciliosus*.

The difficulty that I have felt in accepting the two birds as distinct species, for I have long recognized the difference in tone of colour in the Burmese birds, consists in my knowledge of the great variation in this, that is produced by differences of humidity in the tracts inhabited.

Compare the North-West Provinces *Pericrocotus brevirostris*, *Glaucidium brodiei*, *Syrnium niviculum*, with specimens of the same species from Sikhim. The coloration is invariably and conspicuously deeper in the latter. Take *Pericrocotus roseus* from the dry North-West, and the same bird from humid Tenasserim. Take *Pericrocotus peregrinus* from arid Sindh, and the same bird from the moist slopes of the Assam-boo Hills. Take *Picus mahrattensis* from dry Upper India, and the same birds from below the ghâts in Rutnaghiri.

Great differences in rainfall sharply restrict the areas of distribution of many species, while in the case of others possessing greater adaptive capacity they greatly change the tone of plumage. Look at all the pale Persian and Belooch forms.

I might multiply instances indefinitely, but the thing is too apparent.

At the same time such changes, though common to a degree, are by no means the rule. Numbers of species undergo no such changes. *Reguloides proregulus* is, as Mr. Brooks remarks, the same alike from Murree to Debrooghur, but then it must be remarked that to the best of my belief this species is *restricted* to a humid climate, and is never found in the drier regions except as a bird of passage. But there are many of whom this cannot be asserted, and whose colours seem unaffected by climatic variations of this nature.

Whether then the North-Western and Eastern forms of this *Reguloides* shall be accepted as distinct species, is a mere matter of opinion ; sometimes I have thought that they should be, as indeed I have of the two extreme forms of *Pericrocotus peregrinus* ; but on the whole my present views incline the other way.

Still when *Crocopus chlorigaster*, *phœnicopterus* and *viridifrons*, *Thamnobia cambaiensis* and *fulicata*, and a score of other similar pairs and trios are accepted as distinct species, no logical grounds for rejecting these can be put forward, and as to my mind all classification is to a great extent, as regards minor details like this, a matter of convenience, it does not appear to me to matter one *iota* whether these closely-affined forms are regarded as species or races ; the only important point is

that their differences should be clearly recognized and recorded, and for this we are all, whatever view we may take of the species in question, very much indebted in this case to Mr. Brooks.

A. O. H.

Observations on *Motacilla alba*, Linn., and other Wagtails.

BY W. EDWIN BROOKS, C.E.*

THE continuation of my friend Mr. Seebohm's paper on the Ornithology of Siberia in the *Ibis* for July 1878, is to me most interesting, and he deserves the thanks of all ornithologists for the number of valuable facts brought to light, which, but for his energy and enthusiasm, might for ever have remained unknown. Some of his identifications are most interesting, but to one, which by the bye is also Mr. Dresser's, we must, I think, most decidedly object.

A resemblance in some particulars does not prove identity, but only close affinity. For identity, we must have the closest correspondence in all material points. Now, suppose the adults of any two recognized species were absolutely undistinguishable, and that the young of each did not correspond in all material points, then the two birds are *selon moi*, as specifically distinct as any two with widely distinct adult plumages. I am referring more particularly to small insectivorous birds and Warblers, where we very seldom see variation, if at all.

Amongst some genera there may be found slight specific variation, but the species belonging to migratory genera, as *Motacilla*, *Budytes*, *Anthus*, *Ruticilla*, *Sylvia*, *Acrocephalus*, *Locustella*, *Phyllopneuste*, and many others that might be mentioned, are wonderfully constant to their specific characteristics, even though collected thousands of miles apart. Now *Anthus trivialis* of India is absolutely undistinguishable from the same bird in Europe. So also with *Erythrostera parva* and *Butalis grisola* of the two Continents. *Budytes rayi* of Yarkand is exactly represented by Mr. Dresser's plate in "Birds of Europe," and I have compared the Yarkand examples with European ones, and there was not the faintest difference. *Curruca rufa*, the Common White Throat of the two Continents, corresponds most minutely. *Reguloides superciliosus*, obtained near Calcutta, does not differ a hair's breadth from the example shot by Mr. Hancock at Hartley on the Northumberland Coast. All the Ducks agree marvellously well, and so do numbers of other species that I might mention; but I think I have cited enough to show

* It is almost needless to repeat that the Editor is in no degree responsible for the opinions of his contributors.

that we must look for close specific correspondence between the two Continents, instead of divergence as regards the same species. Certainly, the same *Motacilla* ought not to be notably different in the two Continents.

Of the two Wagtails in question, *M. alba* and *M. dukhunensis*, Mr. Seeböhm states nothing regarding the song of each. All black and white Wagtails have songs, and that of *M. madagascariensis* is particularly good. Suppose *M. alba* and *M. dukhunensis* have different songs; what then? But similarity of song won't prove identity, for I don't think any one could distinguish the songs of *Erythrostera parva* and *E. hyperythra* without seeing the birds. The call-notes of the black and white Wagtails are wonderfully alike, so are those of the Budytes.

The points of difference in *M. alba* and *M. dukhunensis* worth noting are:—

1. *M. alba* has, as a rule, a darker grey back than the other.
2. *M. alba* does not show nearly such white greater coverts as the other bird, *and it ought to do so if the same*. It never does, and on this alone specific identity is impossible. Now I can always separate the immature of *M. luzoniensis* (*M. alboides* apud Seeböhm) by the superior whiteness of the greater coverts, and this is the only mode of separation where both birds occur—at Patna and Dinapore for instance. I, therefore, from my own observation, attach the greatest importance to the white wing-coverts that Mr. Seeböhm thinks lightly of. With reference to the white wing-coverts, Mr. Seeböhm says: "The latter form seems to be confined to Siberia and India."

Intermediate and apparently connecting examples are not conclusive; they prove great similarity or close affinity, *and nothing more*. By intermediate or undecided birds, two species could be united which the pronounced birds of each would utterly condemn. A fully mature or perfect bird against a fully mature bird is a fair comparison. Take a fine-plumaged *M. dukhunensis*; let it weather and wear for some months, and its wing-coverts will have lost so much of their white ends that it would match an *alba* in better plumage, and thus the two species are bridged over; falsely so, I say, in such delicate cases fresh feather must be compared against fresh feather, and birds should be of the same age.

On the other hand, search the *alba* district for the white wing-coverts of *dukhunensis*, and you completely fail.

3. *Dukhunensis* is, I believe, the larger bird of the two; and the bill is stronger and I think rather longer as well.

4. The young of *alba*, in first plumage, have a pale yellow or straw-coloured tint about the head, strongly differing from the pure white of the lower parts. I have shot great

numbers of young *dukhunensis* on their early autumnal arrival, but never saw this yellow tinge so conspicuous on young *alba* on any single head. This difference alone is conclusive, even if the adult birds had exactly the same wing-coverts. A similar difference is observable in the young of the two *Budytes*, *rayi* and *flava*, one being dull fulvous white, and the other white. This goes strongly against the lately fashionable theory, as baseless as it was fashionable, that all the species of *Budytes* are varieties of one, viz., *flava*. The idea that *melanocephala*, or *cinereocapilla*, or even *rayi*, might have been the source, appears not to have occurred. And what about the long-billed and most distinct *B. taiwanus*? It was confounded with *rayi*; but a glance at it forbids the idea, its structural difference being so decided.

5. Why should *M. alba* and *M. dukhunensis*, if the same bird, differ, since other Wagtails, common to both Continents, as *B. melanocephala*, and *B. cinereocapilla*, do not differ? My observations lead me to the conclusion that the black and white Wagtails are remarkably constant in their characteristics, and they are about the last birds in which I should expect Continental variation. Difference of longitude, no more than difference of latitude, can affect the small insectivorous migrants. In the present case I would not consent to identity until the white wing-coverts are as common in Europe as in India, and until the young in both Continents were alike. A slight difference is often of very great importance, and a constant difference, however slight, is against identity, and is of the same value as if the differences were numerous and most marked. To the ornithologist it should be so.

Take two Buntings that Mr. Dresser keeps distinct, and I think justly so—*E. cia* and *E. stracheyi*. The differences are not so well marked as in the two Wagtails. In the latter we have not only adult difference and geographical difference, but we have, too, a juvenile difference. I don't see what more is required for specific distinctness. The difference in the juvenile plumage is a very strong one, stronger than the wing-coverts of the adults. It cannot be set aside.

I think we should also take great notice of the much superior grey of *dukhunensis* at all times. *Alba* is much more dusky.

I forget whether adult *alba* is tinged with straw colour about the head in winter. *Dukhunensis* never is.

This question leads to another: European examples of *B. flava* don't agree as regards the head with those of India. The grey of the crown of the former is darker, and there is an amount of *very dark grey* on the cheek, mixed with a small white streak or two, which dark grey we do not see in the Indian

bird. The latter's cheeks are pale grey and pure white, and the crown is always of a pure light grey, in full plumage. I think, too, the tail of the European species is longer; but of this I am not quite sure. We ought to have the same exact correspondence in *flava* of the two Continents that we have in *melanocephala* and *cinereocapilla*; and I therefore propose that Hodgson's term of *Budytes dubius* be used for the Indian representative of *B. flava*. The adult females in breeding plumage of each should be compared, and the young in first plumage.

Abolishing a recognized species where a slight difference is well known to exist, as in *M. dukhunensis*, is not satisfactory; and I always feel, in such a case, that an injustice has been done to a bird worthy of a better fate. When we have not the means of absolute proof, and *intermediate bridging examples are not proof*, the bird should be allowed to stand for the sake of convenience. It does not much matter, while we have this differing "form" constantly before us, whether it is actually specific or not. Even Mr. Darwin himself could not prove the point. We may abolish this species or that, but while one strong fact remains, the majority of observers won't concur.

The most perfect case of bridging over by means of intermediate forms, is that of the Skylarks. A skin of *Alauda gulgula* could be stuffed inside that of a large Persian or Punjab Skylark. One is a giant and the other a pigmy, yet by intermediate forms Mr. Dresser has bridged them over. Is this satisfactory? Worst of all, both are found in India, but the large bird, *A. dulcivox*, is only a cold weather visitant, while *gulgula* breeds as far south as Cawnpore and Bhaugulpore. The Skylarks are a puzzle to us all, and we cannot tell exactly what constitutes specific difference in *Alauda*. Certainly there are a good many kinds, and I believe the end of the world will come before they are all correctly separated.

When man interferes with Nature, any thing may be done; and a Bantam and a Cochinchina fowl may be legitimately bridged over; but Nature, as far as birds are concerned, with which man does not interfere, is immutable, and especially so are the small sylvine migrants. Six thousand years would not* alter the tint of a Reed Warbler, nor the form of its wing and bill, and I don't see why a Wagtail should be less constant to its specific characters.

Motacilla luzoniensis, Scopoli.—This Mr. Seeböhm proposes to call *M. alboides*, Hodgson. It can never take this name, for *M. alboides* is beyond all doubt the winter plumage of

* Is not this, just a little, begging the question?—Ed

M. hodgsoni, Gray. There is a note upon the drawing of Hodgson's *M. alboides* as follows: "*Motacilla hodgsoni*, Blyth, *alboides mihi*," then follow dimensions that I need not transcribe, and below them this note: "Valley of Nepal, January 15th, sexes and youth all together." After this particulars of bill, nostrils, feet, &c., note carefully that Hodgson refers to a *winter* bird, when no *luzoniensis* would be found there, for it migrates far south, even to the islands of the Indian seas. Besides, his drawing shows no white band down the sides of the neck; this white band being in connection with the white of the forehead, as in *dukhunensis*, *alba*, and *lugubris*. Moreover, the back is shown to be pure black, and the back of *luzoniensis* is *not* all black in winter. Hodgson's drawing is a very good one indeed of *M. hodgsoni* in January. Its throat, to the extent shown in the drawing, is white, and does not become black again till the spring is well advanced. I have had the bird in every month of the year. *M. personata* also gets a white throat in winter. Let Mr. Seeböhm carefully examine Hodgson's drawing No. 133, the copy in the British Museum, the original being with Mr. Hume, and he will see that it cannot possibly represent *Motacilla luzoniensis*.

If the white of the forehead in Sonnerat's plate is not confluent with the white of the sides of the breast, as in *alba*, i.e., if there be not an irregular white band down the side of the neck joining the white forehead and white about the region of the eye, this band reaching as low as bend of wing till it communicates with the white of the lower surface, then the bird is *not* that generally known as *luzoniensis*, but is probably immature *personata* or some affined species; but it could not be the resident Himalayan *hodgsoni*.

In this case why should not Gould's term of *leucopsis* be adopted, which is certainly not applicable to any other bird?

NOVELTIES.

Garrulax subcærulatus, Sp. Nov.

Like G. cærulatus, but more olivaceous and less rufescent above, and with the ear-coverts, feathers behind the eye, and posterior portions of cheeks, silvery white, more or less tipped with black, and with the three exterior tail feathers on either side broadly tipped with white.

This markedly distinct, but yet closely-allied, species replaces *G. cærulatus* of Nepal, Sikhim, &c., on parts of the Khasia Hills near Shillong.

On the difference of the colour of the upper parts, marked as it is, I lay no stress, because Sikhim and Nepal birds of this class are always deeper colored and more rufescent than specimens of the same species from the Khasias. But I have examined over 30 specimens of *cærolatus*, and not one exhibits a trace of the broad and conspicuous white tipplings to the three external lateral tail feathers, characteristic of the present species, nor does one of them show a trace of the large pure white patch on the either side of the head that distinguishes *subcærolatus*.

The following are dimensions taken from the skin :—

Length, 10 to 11 ; wing, 4·2 to 4·6 ; tail, 5·0 to 5·8 ; tarsus, 1·48 to 1·6 ; bill at front from frontal bone, 0·96 to 1·03.

Amongst our birds collected in the Malay Peninsula are two species which I am unable to identify ; they may possibly not be new, but I have spent some time in consulting every available authority, and I cannot find any trace of them.

Iole terricolor, Sp. Nov. ?

Above, earthy brown ; chin, throat, abdomen, vent, lower tail-coverts, pure white ; breast, very pale dove brown ; ear-coverts, pale fawn brown.

Length, 8·0 ; wing, 4·0 ; 5th and 6th primaries, equal and longest ; 4th, 0·1 ; 3rd, 0·3 ; 2nd, 1·0 ; 1st, 2 inches shorter ; tail, 3·9 ; bill at front, straight from frontal bone to tips, 0·9 ; tarsus, 0·7.

The entire upper plumage an almost perfectly uniform pure brown, not very light, a color intermediate between an earth brown and hair brown, but perfectly pure, and without the faintest admixture of either rufous or olive ; lores and ear-coverts a lighter rather warmer brown, much the color of the ear-coverts in *Hemixus flavala* ; a dark patch under the eye at the base of the lower mandible, as in this latter species, but not so dark colored ; chin, throat, wing-lining, inner margins of quills, abdomen, vent and lower tail-coverts, white ; breast pale grey or dove brown ; tail quite even ; feathers of the forehead, crown, and occiput all sharply pointed.

Bill as in *Iole*, that is to say, straighter, longer, and with a sharper culmen ridge than in *Hemixus*, but not so large as in *Hypsipetes*, though of much the same character.

This species is closely connected with the green section of the *Hypsipetes*, with *Hemixus* and *Iole*, but it is, in my opinion, closer on the whole to *Iole*, although no doubt the shape of the feathers of the throat remind one more of *Hypsipetes malaccensis*. The bill, however, is much slenderer.

This species, of which only one specimen was obtained, was shot in the neighbourhood of Malacca, and no colors of soft parts recorded, but the bill appears to be a moderately dark brown, paler on the lower mandible, and the feet appear to have been a moderately pale grey brown.

***Rallina telmatophila*, Sp. Nov.**

Rich olive brown, breast paler ; chin and throat, white ; wing lining, axillaries, and abdomen, flanks, and lower tail-coverts, black, broadly banded with white.

Length, 9.0 ; wing, 5.35 ; tail, 3.0 ; tarsus, 1.7 ; mid toe and claw, 1.66 ; bill at front, 1.2.

The sex was not recorded, neither were the colors of the soft parts, but in the dry skin the legs and feet are almost black, and were probably deep green.

The upper mandible deep brown, the lower mandible greenish horny.

The entire upper plumage, visible when the wings are closed, a very rich warm slightly olivaceous brown, almost precisely the color of the back of a good dark specimen of *Cinclus asiatica*, or a freshly-moulted specimen of *Dumeticola affinis*. A paler brown line from the nostrils over the lores ; lores, cheeks, and ear-coverts dull earth brown ; the bases of the feathers whitish ; chin and throat pure white ; breast, a pale dingy slightly olive brown ; entire abdomen, sides, flanks, axillaries, wing-lining, lower tail-coverts, black, broadly banded with white ; quills, with the inner webs brown, and on the lower surface the basal portions with large white spots or imperfect bars not extending to the shafts ; the 3rd and 4th quills are equal and longest.

This bird is clearly closely connected with *Rallina fasciata*, but it has a longer bill, much more massive tarsi, green or black legs, pure white chin and throat, no barrings on the upper wing-coverts or outer webs of the quills, and it has the red everywhere replaced by olive brown.

Except in the size of bill our specimen does not differ greatly in dimensions from male *fasciata*, but the bill is very conspicuously larger. Shot a few miles inland from Malacca.

Recently-described Species.

Republications.

Turdinus nagaensis, *God.-Aust.

"Above, dark umber brown throughout, with no streaking on the feathers of the head; beneath the same colour, but much paler, with a slight rusty tint shading into and adjacent to the dull whitish centre of breast; chin also whitish; irides dark brown; legs and feet light sienna grey.

"Length about 5·7; wing, 2·2; tail, 2·2; tarsus, 0·90; bill at front, 0·50; mid toe and claw, 0·72; hind toe, 0·35; claw, 0·3.

"This species is very distinct from *T. garoënsis* in its deeper umber coloration and smaller size; particularly is this the case in the size of the legs, feet, and the hind claw. Mr. A. W. Chennell, of the Topographical Survey, obtained this bird in the Eastern Naga Hills."—*A. & M. N. H.*, December 1877, p. 519.

Staphidea plumbeiceps, God.-Aust.

"Head ash grey, purer behind; feathers narrowly edged paler; back pale olive brown, a few feathers pale shafted; wings umber brown; tail darker, the four outer feathers tipped with white, increasing outwards diagonally; lores pale grey; the ear-coverts only to just beneath the eye chestnut; the feathers white shafted; chin, throat, and all the lower parts white; flanks pale sepia grey; under tail-coverts the same, tipped white; irides reddish brown; legs umber.

"Length, 4·6; wing, 2·3; tail, 2·05; tarsus, 0·7; bill at front, 0·3.

* This I at first thought must be *Pellorneum tickelli*, Blyth, described, S. F., I., 299 note, which I have from Amherst, Tenasserim, and also from Suddya, but I now find that it is identical with *Pellorneum ignotum*, Hume, S. F., V., 334, which name has precedence.

"This bird is close to *Staphidea torqueola*, Swinh., but in that species the chestnut commences at the base of the lower mandible, passes under the eye, and round the nape in a broad band of chestnut brown, and the last three tertiaries are margined white on inner web. This is absent in the Assam bird, obtained by Mr. M. J. Ogle near Sadya and Brahmakhend, Eastern Assam.

"In my note book I find that I obtained one example in the Dikrang valley, Daffa hills, which I shot at camp No 9, but this was subsequently lost somehow or other, and therefore I did not bring it in the list of birds from the Daffa hills, published in the Journal, Asiatic Society of Bengal."—A. & M. N. H., December 1877, p. 519.

"Can this be *Ixulus striatus*, Blyth? Blandford, in J. A. S. B., 1872, p. 166, says the Darjeeling bird is the same as the Tenasserim type in the Calcutta Museum, but mentions that it has a rufous supercilium, which none of my specimens possess.

"Since writing the above, I have received from Mr. W. Blandford, in a letter from Calcutta, in reply to some questions I wrote to him regarding this species, *Ix. striatus*, some remarks which I now quote: "I have two specimens of the Sikhim bird. I have recompared them with the type from Tenasserim, and I cannot understand how I can have identified the two. The Tenasserim bird is, as Blyth describes it, greyish brown (ashy brown according to Tickell); the cap may have been a trifle darker, but very little, not so distinct I should say as in the Sikhim bird, and the white shafts are far more conspicuous in the Tenasserim type. Above all the bill is much larger in the latter, the difference is so marked that I think that I must have compared a Sikhim specimen differing from those I have now. The cheek patch is distinct, but faint. The specimen from Sikhim, (*Ix. rufigenis*, Hume) which I now have, the rufous supercilium is only indicated posteriorly." This last title was given to the Sikhim bird by Mr. A. O. Hume in STRAY FEATHERS, Vol. V., p. 108. Mr. Blandford has now followed up his letter by sending me two specimens from Mr. Mandelli's collection of this Darjeeling form, and on comparison I found that it is quite distinct from *plumbeiceps*. This last has the head of a decided ash grey colour, and the feathers are more lengthened behind, so as to give a subcrested appearance; bill shorter and deeper; legs stouter, altogether a larger bird. In one specimen from Darjeeling, there is an extension shown off the rufous of the ear-coverts round the nape, of which there is not a trace in the Sadya examples. These are the dimensions of *rufigenis*. Wing, 2.45; tarsus, 0.6; bill at front, 0.47.

"The wings run about equal. This genus presents us with an interesting example of modification of plumage in areas that are in a great measure separated now physically. We appear to have five forms:—

1. *Staphidea castaneiceps*, Moore, (1854). Garo, Khási and Naga Hills.

2. *Staphidea striatus*, Blyth, (1859). Tenasserim.

3. *Staphidea rufigenis*, Hume. Sikhim Hills.

4. *Staphidea plumbeiceps*, Godwin-Austen. Sadiya, Eastern Assam.

5. *Staphidea torqueola*, Swinhoe. W. China."—*God.-Aust.*, J. A. S. B., XLVII., pt II., 20, 1878.

[To this list we must add the perfectly distinct *S.* or *I. humilis*, Hume, from the summit of Mooleyit, described, S. F., V., 106.—ED., S. F.]

Scops minutus, W. V. Legge.

"At Trincomalie, in July 1875, I obtained a young bird belonging to a small species of Scops Owl unknown to me. I kept it some little time, and it then died. In May of the following year, while staying with Mr. Bligh, of Cotton Estate, Ilaputale, I met with a skin of an adult bird, which he had caught in the chimney of his bungalow at Kotmalie, and which I recognized as belonging to the same species as my young bird. Its small size and dark plumage prevented my identifying it with any Scops Owl, described in Mr. Sharpe's Catalogue, and through the kindness of Mr. Bligh I was enabled to send it home to the British Museum. It has now been presented to the national collection by that gentleman.

"Messrs. Whyte & Co., of Kandy, have just sent home to Mr. Sharpe, on loan, a second example, killed in one of the coffee-districts near Kandy. On our comparing the series thus obtained with the Scops Owl in the national collection, this species turns out to be new, being distinguished from other Indian members of the genus by its small size and dark colour. Messrs. Whyte & Co. state they have received once before an example of this Owl. I propose to describe this interesting little addition to the Avifauna of Ceylon under the name of *Scops minutus*, it appearing to be the smallest Scops Owl yet discovered.

"*Description.*—*Male.*—Length to front of cere (from skin), 6·0; culmen, 0·55; wing, 4·85; tail, 2·1; tarsus, 0·8; outer anterior toe, 0·7; its claw straight, 0·4; height of bill at cere, 0·25.

"Iris yellow; bill olivaceous brown; cere greenish; feet fleshy brown.

"Above, the general hue is dark brown; the feathers of the head, back, rump, scapulars, tertials, and wing-coverts crossed at the centre with transverse spots of ochraceous, spotted finely, and closely vermiculated on the rest of their surfaces with grey and ochraceous grey, surrounding transverse irregular markings of blackish; the feathers of the hind neck are crossed with bold wavy markings of whitish, and margined with rufescent buff; the outer scapulars are white externally, with blackish terminal spots and oblique central bars of the same edged with rufous; the primary and outer secondary coverts have their dark markings mingled with rufous patches and set off with white spots near the tips of the outer webs; primaries and secondaries brownish rufous, mottled with blackish brown, and the inner webs banded broadly with the same; the outer webs of the first five primaries crossed with five white blackish-margined bars; the tip paler than the rest of the feather, and mottled with dark brown; tail brownish, washed with rufous on some of the feathers near the base, mottled with blackish brown, and crossed with five or six bars of buff-white with black edges; ear tufts concolorous with the head, and rufous at the base of the feathers.

"Loreal plumes black, with white bases; facial disc grey, pencilled with blackish; ruff pale rufous, the feathers edged and centred with dark brown; chin whitish; foreneck and under surface, with the flanks, closely stippled with iron-grey on a white ground; the feathers with broadish central stripes of blackish, and crossed on their concealed portions with fine wavy transverse black marks; on the lower parts the stippling is more open, the under tail-coverts being chiefly white, with the markings confined to the tips; legs rufescent, with wavy brown transverse marks; under wing-coverts whitish, shaded with rufescent, and crossed with irregular markings of brown.

"The example sent home by Messrs. Whyte & Co., of Kandy, differs in the bolder nature of the transverse white spottings on the upper surface, and in the blackish markings taking the form of distinct shaft lines; the ruff is more conspicuously edged, and is of a deeper buff than in the Museum specimen; the under surface is not so closely stippled, and does not present the same "pepper-and-salt" appearance, the markings taking the form of vermiculations, and the centre stripes being very bold.

"This little Owl comes nearer to *Scops malayanus* than any other Indian member of the genus, but differs from it in its

smaller size and in the darker upper parts, and closely stippled under surface.

"In its young plumage, it is rufous on the entire upper surface, and the breast is whiter than in the adult.

"*Habitat*.—Northern, Western, and Central Provinces of Ceylon, probably the whole island.

"Type in British Museum.

"*Locality*.—Kotmalie, Central Provinces, Ceylon."—*A. & M. N. H.*, February 1878, p. 174.

***Abornis flavogularis*, God.-Aust.**

"Above, ash-grey, purer grey on rump, rather darker on the head; wings pale umber-brown; tail ash-brown; the two outer feathers white on the inner web, the next with a narrow edging of white; lores white; ear-coverts white and grey; chin pure yellow, fading on throat; breast, nape, flanks and thighs greyish white, whitest on the breast; a very faint yellow tinge on the abdomen; under tail-coverts white; a small patch of yellow on inner shoulder of the wing; bill dark above, buff below. Wing, 1·84; tail, 1·8; tarsus, 0·67; bill at front, 0·3.

"*Habitat*—Sadiya, (Mr. Ogle). This species is nearest to *A. xanthoschistus*, having the same coloration of the head and form of the bill; it is distinguished from all other species by its entirely ashy upper surface."—*Pr. A. S. B.*, April 1878, 108.

***Batrachostomus javensis*, Horsfield apud God.-Aust.**

"This specimen belongs to the Indian Museum, Calcutta, where I found it among some skins that had been sent down by the lamented Captain John Butler from the Nágá Hills, and I was, by the kind permission of the trustees, allowed to bring it to England. It is a most interesting specimen in the rufous phase of plumage, but unfortunately the sex is not marked. It agrees with a specimen of *B. javensis* female in the collection of Lord Tweeddale, and the description of the species, as given in *P. Z. S.*, 1877, p. 435, and the dimensions do not differ materially. I give a description of the Nágá Hill bird, interesting as being found so far to the northward.

"Entire plumage rich chestnut brown, a few white feathers at the base of the upper mandible tipped rufous and barred

with black; white on chin and throat; some of the feathers on the latter crossed by a V-shaped dark line, but they only extend to the upper breast, this being covered by feathers having large rounded white centres, bounded on the terminal margin by a narrow dark line and fringed with chestnut; towards the abdomen and flanks the white marks become narrow and lengthened. The wing is unspotted, but conspicuous white feathers margined with black are mingled with the scapulars, and there is a well-marked nuchal collar, each feather crossed by a narrow black line edged terminally by another; there is a slight mottling of dull black on the primaries and secondaries and lower back; the tail is similarly mottled and crossed by seven pale clear rufous bands; the outer penultimate tail feather has five distinct white bars on the outer web, the very short outermost feather has a terminal whitish spot. Wing, 5.25; tail, 5.5; tarsus, 0.6; bill at front, 0.6; breadth at gape, 1.05; mid-toe and claw, 0.75.

"The long frontal plumes are black, rufous at the base.

"This bird is, I think, nearest to *B. javensis*, *B. affinis* apparently not having any white in front of the eye.

"On my submitting this paper and the specimen to Lord Tweeddale he thus wrote to me: "This Nágá Hill example of the genus *Batrachostomus* "without doubt belongs to the *B. javensis* (Horsf. ex Java). I have critically compared the two and cannot detect any difference. It may turn out to be Mr. Hume's *B. castaneus*, in which case *B. hodgsoni* will become a synonym of *B. javensis*. It is a large form of *B. affinis*, but the white on the throat seems to extend higher up, as it does in the Javan species, and in *B. cornutus* of Sumatra and Borneo." Lord Tweeddale does not concur with me regarding the white mark in front of the eye, and says, "it is just as strongly marked in my examples of *B. affinis*."—*God.-Aust.*, J. A. S. B., XLVII, pt. II., 13, 1868.

[This description does not by any means correspond well with the specimens which I possess of *B. castaneus*, which I assume to be the rufous stage of *B. hodgsoni*, though this is still an open question. Not one of my specimens, for instance, has any trace even of the white bars referred to on the penultimate tail feathers. Still so little is as yet known of the changes of plumage in these *Batrachostomi* that, for the present, until I can examine the specimen from Assam, I cannot assert that *B. javanensis* may not be the same as *B. castaneus*. The latter is quite distinct from both *affinis* and *stellatus*, (*javanensis* apud Bly. nec. Horsf.), but it may be identical with true *javanensis*, of which I have no specimens.—ED., S. F.]

Notes.

MY FRIEND MR. SHARPE adopts, in regard to several species included in his third Volume, names which appear to me to be indefensible from his stand point as *par excellence* a British Ornithologist.

For instance, at page 146, he designates the Chough, GRACULUS GRACULUS. This is in direct contravention of rule 13 of the Brit. Assoc. Code. Surely he who so ably presides over the British Ornithological collection should not set an example of transgressing that Code!

In this particular case too no necessity for it exists.

For this genus three generic names only appear to have been proposed—*Coracia*, Brisson, 1760; *Graculus*, Koch, 1816; and *Fregilus*, Cuvier, 1817.

Brisson's generic name, though available under rule, must, I admit, be rejected as too close to *Coracias*, Linnæus, which has by rule precedence, only such genera of Brisson being allowed as are supplemental to, and do not interfere with, those of Linnæus.

We, therefore, fall back up upon *Graculus*, the next oldest* name. No doubt this was also a Linnæan genus, but as Mr. Sharpe points out one antecedent to the twelfth edition of the Syst. Nat., and *not* retained in this latter, and, therefore, according to the Code null and void. The Code may be wrong, but so long as it is a Code we English are bound to abide by it, under penalty of introducing that abomination of confusion that hangs like a fog over the nomenclature of Codeless writers.

We have only then to fix the earliest specific name. No doubt *graculus*, Linn., is the earliest (by one page), but that is inadmissible under the Code, we having accepted it as the generic name.

The next name is another of Linnæus', viz. "*eremita*", S.N.I. 159. Badly as the species is described under this name, the "*rostro pedibusque rubris*," and the references given, leave no reasonable doubt that the bird thus named was the Chough, and it seems to me to follow that this latter should stand as

***Graculus eremitus* (Lin.)**

IN DECEMBER last Captain O'Moore Creagh shot a fine male Merganser or Goosander (*Mergus castor*) near Ajmere. This species is of course a mere straggler to these parts.

* I do not consider the *Chough*, and Alpine *Chough* congeneric, but even if they were, as far as I can make out, Koch's name was published earlier than Vieillot's *Pyrrhocorax*, though both date from 1816.

NOT LONG AGO my friend, Mr. Chill, kindly sent me two specimens in nearly full breeding plumage of *Lobipes hyperboreus*, shot by himself on the 2nd May 1877, at the Sooltanpoor Salt Works. This was probably on the birds' northern migration. It will be remembered that Mr. Adam got specimens, (S. F., II., 338) at the Sambhur Lake (another salt source) at the close of September, when the birds were doubtless on their return journey to the sea coast. Except at times of passage they are never met with inland in India. I have now received numerous specimens from Kurrachee, the Gulf of Oman, and the Persian Gulf, and they occur also off the west coast of the peninsula though sparingly all the way to Ceylon and up the east coast to Madras, where my friend, Dr. Ludovic Stewart, obtained the first specimen, and where I have since found that, at times during the old season, they are almost common in the bazar.

CAPTAIN BUTLER writes from Kurrachee:—

"Calling on Colonel Renney here, I saw three beautiful living specimens of *Myiophonus horsfieldi*, which he informed me that he had obtained, when quite young, at Poorbunder," (in Kattiawar, E. Long. 69° 50', and N. Lat. 21° 37'.) "He told me that several pairs breed in the cliffs there early in the rains, and that the people regularly take the young, which they sell for four annas or so to the residents, descending the cliffs by rope ladders."

This is the most westerly locality from which this species has been as yet recorded. See also S. F., III., 469.

Later again Captain Butler informs me that he has received a nest and eggs of this species, taken for him in these cliffs by a friend.

EMBERIZA BUCHANANI, Bly., J. A. S. B., XIII., 957, founded on one of Buchanan Hamilton's drawings, has been generally identified with *E. hortulana*, Lin., even in recent works like Mr. Dresser's.

This identification depends, I believe, mainly on a foot note of Blyth's to J. A. S. B., XVIII., 811, "*E. buchanani*, nobis=*E. hortulana*, (L)." Now I possess Blyth's own copy of the J. A. S. B., sold to me by Jerdon when he was leaving India, and in this he has written in his own hand writing opposite the foot note, "No!" and as a matter of fact this identification is quite wrong. *Hortulana* does not occur in India, while *huttoni*, which is common in Rajpootana and Central India, was the species figured by Buch., Ham., and described by Blyth *loc cit*

as *buchanani*, which name must take precedence. The description "differs from *hortulana* in having the head, neck, and streak descending from the lower mandible ash grey instead of dull green," is quite sufficient to fix the species beyond possibility of doubt.

I do not know on what grounds Moore and Horsfield (Cat. B. Mus., E. I. C., II., 484) identified Hamilton's drawings with *hortulana*, from which it differs in colour, while it altogether agrees with *huttoni*; but the identification is certainly wrong, and I may add that *hortulana* certainly does *not* occur in any of those parts of India to which Hamilton's investigations extended, (its Persian form, *E. shah*, Bp., may extend to Khe-lat), while *huttoni* does.

ON A PREVIOUS occasion (S. F., III., 313,) I fully described two specimens of a *Baza*, one from Tenasserim, the other from native Sikhim, which I doubtfully identified with *B. sumatrensis*, Lafres.

It was a large bird. Wing in the male, 13.1; in the female, 13.75; much larger than the dimensions usually assigned to *sumatrensis*, and with a conspicuous central throat stripe, in this respect resembling *magnirostris*, and I proposed for it, if distinct, the name of *incognita*.

I have now to record another species of *Baza* shot in October in the Wynaad—a young bird, obviously of quite a distinct species to my *incognita*, which I am disposed to identify with Mr. Legge's species *Baza ceylonensis*, of which description and dimensions have already been given (S. F., IV., 247.)

This present specimen measures in the skin :—

Length, 17.3; wing, 11.95; tail, 7.9; tarsus, 1.5; bill from gape, 1.8; culmen from edge of cere to point, 1.03.

The bird was a male, and these dimensions tally very well with Mr. Legge's.

The entire bill, cere, and claws appear to have been blackish; the legs and feet yellow; the tarsus feathered in front to within 0.62 of foot.

The plumage is, however, in many respects very different to what Mr. Legge describes.

The forehead, a very broad stripe from the forehead over the eye and ear-coverts, cheeks, chin, throat and breast, white, with a faint creamy tinge.

The feathers of the forehead and some of those of the cheeks and superciliary band with brown shafts, and the central feathers of the chin and throat also with a dark shaft, as if

indicating where, in an older bird, a central throat stripe *would* be; ear-coverts pale rufous brown; all the feathers of the posterior portion of the forehead, crown, occiput, and nape deep brown, more or less patched or suffused on many feathers with pale rufous, and all very broadly margined with white; the crest jet black, broadly tipped with white; the longest feathers 2·8 in length.

Interscapular region and scapulars brown; the feathers, with one or two very broad inconspicuous darker brown transverse bands, and all narrowly margined at the tips with pale fulvescent or fulvous white; rump, lower back, and upper tail-coverts a rather paler brown; all the feathers narrowly tipped with white, and, as a rule, darkest just immediately behind this tipping.

Tail earthy brown, narrowly tipped with white, with one very broad subterminal band nearly reaching to the white tipping; two others higher up, and a third more or less imperfect one concealed by the upper tail-coverts; primaries and secondaries much the same color as the tail, and banded on both webs with dark brown like the tail, and like it white tipped, but on the inner webs the outer portions of the interspaces above the emarginations are more or less pure white.

Lesser coverts, winglet, and primary greater coverts deep brown, the former narrowly tipped with white; median primary and median and greater secondary and tertiary coverts, and tertiaries a light rufescent or fawny brown, conspicuously tipped with white, and some of them with more or less of their basal portions white.

Lower breast, abdomen, sides, flanks, and axillaries white; each feather with one or two broad, more or less imperfect, pale rufous brown transverse bars; a trace of the same on some of the tibial plumes; rest of tibial plumes, feathers about and immediately above the vent, lower tail-coverts and wing-lining cream color, with a slight fawny tinge here and there and unbarred; the lower surface of the quills and tail strongly barred black and pale grey, more or less of the latter, becoming pure white towards the bases of the feathers.

As will be seen, this specimen does not, so far as plumage is concerned, agree over well with Mr Legge's description but looking to the locality where it was obtained, less than 500 miles north-west of the central hills of Ceylon, and in a hilly region which may be said to be a continuation of these latter, I can scarcely doubt but that it belongs to the same species.

427.—*Actinodura egertoni*, Gould.

IN HIS PAPER on the Birds of the Khasia and North Cachar Hills, (J. A. S. B., XXXIX, Pt. II., 105, 1870) Major Godwin-Austen referred to an *Actinodura*, near *egertoni*, which he said differed "in the crown and nape being ashy brown; shoulder of wing and coverts olivaceous brown; tail pale rufous brown; all the feathers distinctly barred; beneath pale rufescent; no ashy tinge, and pale rufous on the neck and breast; the principal point of difference is in the centre tail feathers and its rather smaller size. Wing, 8.2; tail, 4.5."

Later in his list of Birds of the Daffa Hills, *op. cit.* XLV., Pt. II., 76, 1876, he remarks:—

"I mentioned the points in which the Khasia Bird differed, and I now see that not the least important of these is the distinct difference in the colour of the shoulder of the wing, the back and rump, which is an ochrey olivaceous, but in the Daffa specimen red brown, as given by Jerdon for the same parts of true *egertoni*. All the birds (I have a large series from the Hill ranges south of the Brahmaputra) are identical, and so distinct from the *egertoni* of the Eastern Himalaya that they must receive a specific title, which I propose should be *A. khasiana*."

I must wholly dissent from this view. I also have large series from both the Khasia Hills, and from Sikhim and Nepal, and I must distinctly assert that there is no constant difference in size, in the colour of the head, in the barring of the tail, or in the colour of the chin and throat. The only constant difference is the more rufous tinge of back, wings, tail, breast, and abdomen, in Sikhim and Nepal specimens, very pronounced in some specimens, slight in others, and barely recognizable in a few. Considering the deeper and more rufous character of the plumage of all such birds from Sikhim, *e.g.* in *Pomatorhinus ruficollis*, *Trochaloxyron rufogularis*, &c., &c., this difference in coloration so slight in some specimens, although generally apparent enough, will certainly not, in my opinion, justify specific separation.

Half the Passeres in Persia and Beloochistan, for instance, would have to be constituted distinct species on similar grounds, running as they do so constantly paler than their European representatives.

A COMPARISON of a specimen of

LAYARDIA RUBIGINOSA, *God-Aust.*

P. Z. S., 1874, 47; J. A. S. B., XLIII., 164, pl. V.,
S. F., III., 397, DESCR.

from the Muniore Valley, with others of

PYCTORHIS LONGIROSTRIS, *Hodgs.*

Moore, P. Z. S.⁷¹, 1854, 104.

Moore and Horsf., Cat. Mus. E. I. C., 408, No. 666, 1854.

Jerd., B. of In., No. 386, II., 16, 1863.

from Cachar, Gowhatti at foot of the Khasia Hills, the Bhotan Doars, and the Sikkim Terai, has proved that the two are identical. Major Godwin-Austen's plate led me to suspect this from the first, but his assignment of the species to *Layardia* staggered me, and I thought it possible that the artist might have misdrawn the bill, since it was impossible to believe that any ornithologist would assign a bird with a bill, such as *Pyctorhis longirostris* has, and such as the plate above referred to represents, to the genus *Layardia*.

Both *Layardia subrufa* and *rufescens* have true Malacocerine bills, and the feathers of the head belonging to the same type. *Pyctorhis longirostris*, beyond belonging to the same huge family, has nothing in common with *Layardia*, except the rufous tint, and even this is of a wholly different character.

The two descriptions tally so marvellously that it is difficult to understand how this should have been overlooked—the only difference being that, (the colour of the under surface varying a good deal, as such birds commonly do in depth of coloring) Moore described one with the lower surface rather whiter, Austen one with the lower parts rather more rufescent.

The dimensions differ somewhat it is true, but not materially, and it may be useful to contrast those of Moore and Austen with those of specimens now before me.

		Length.	Wing.	Tail.	Tarsus.	Bill at front.
Moore	(Nepal Terai) ...	8.25†	2.75	3.25	1.0	0.62
Austen	(Munipur Valley) ...	9.5	3.0	4.8	1.16*	0.82
Hume	(Cachar) ...	8.2†	2.9	4.5	1.03	0.7
"	(Munipur Valley) ...	8.5†	2.92	4.6	1.08	0.75
"	(Gowhatti) ...	7.85†	2.9	3.75	1.16	0.65
"	(Sikkim Terai) ...	8.0†	3.1	4.3	1.08	0.7
"	(" ") ...	8.6†	3.0	4.7	1.17	0.8
"	(Bhootan Doars) ...	7.25†	2.8	4.0	1.2	0.71
"	(" ") ...	7.9†	2.9	4.0	1.15	0.73

Some specimens agree in plumage more exactly with Moore's, others with Austen's description; especially some *do* show blackish shafts to the frontal feathers, while others do not.

As to the true generic position of this species, I do not hesitate to confirm its location in *Pyctorhis*. The wings, tail, feet, and what I hold to be of considerable importance, the character

* Misprinted 1.6, J. A. S. B., *loc. cit.*

† In the skin; Major Austen's measurement of length is probably either in the flesh, or allowing for the shortening of the neck in dry skins.

and texture of the plumage, are all identical with those of *P. sinensis* and *P. griseigularis*, Hume (*altirostris*, Jerd. *apud* God-Aust., nec Jerd.) ; and though the bill is much more elongated, still if held side by side, it will be seen that the bills of *sinensis* and *longirostris* present precisely the same characters, the same curved culmen and commissure, the same nares, the same style of compression, and though it might perhaps be justifiable to separate *longirostris* under a separate sub-genus, it is certainly closer to *Pyctorhis* than to any other genus with which I am acquainted.*

421.—*Trochalopteron rufogulare*, Gould.

The great variation observable in the plumage of this species has never, I believe, been noticed.

In some specimens only the point of the chin is rufous ; the rest of the chin and throat is pure white ; in others the whole of these parts is rufous ; every intermediate amount of rufous is met with, and the rufous varies from rich ferruginous red to pale ferruginous buff.

In some specimens the whole of cheeks, ear-coverts, and feathers behind these are entirely black ; in some the black is mottled with white ; in some with olive ; in some the ear-coverts are rufous like the chin, and these variations are combined in a variety of ways.

The greater part of the lores are white in some specimens, buffy or dingy white in others ; bright rufous buff in others. Occasionally this patch is continued only a little tinged with olive as a broad supercilium over the eyes.

The breast varies from deep olive brown to pale grey ; sometimes it is densely studded with large black spots ; sometimes the black is reduced to a few straggling specs.

Sometimes, indeed most generally, the whole cap is black, but in some specimens it is rich olive like the back, only blotched with black here and there.

The colour of the upper surface varies from an extremely rich rufous olive brown to a comparatively pale pure olive.

Every part of the plumage varies more or less.

The variation in colour is to a certain extent local.

Thus the only specimens that I have seen with quite the entire throat, right down on to the breast, rufous, are from the Khasia Hills and other places in Assam.

* Since this was in type, Major Austen has himself admitted the identity of his *Layardia rubiginosa* and *Pyctorhis longirostris*, but he endeavours to maintain that the bird is a *Layardia*, a totally untenable position.

The deepest colored and most spotted birds are all from Sikkim and Nepal. The palest from the hills to the north of Moussouri, and the upper parts of the Bhagiruttoe Valley.

I have not yet met with one Sikkim or Eastern Nepal specimen, with really rufous ear-coverts, but these are common amongst Kumaon and Gurhwal birds, and seem to be universal in Khasia Hill specimens.

At the same time these different forms are all so completely united by intermediate ones, that it is quite impossible to make a second species out of any of them.

AS FAR AS I CAN make out, Mr. Gray is correct in assigning names to our Bush Quails differently to Jerdon.

There are two clearly distinct species—the Jungle Bush Quail and the Rock Bush Quail. It may be useful to republish here from the Rough Draft of Nests and Eggs, (now out of print), the main points of distinction between these two species.

“The adults of both sexes (and I believe most of the young also) may be distinguished at a glance by two characters.

“1st.—The *bright chestnut* hue of the chin and throat of the Jungle Bush Quail, which contrasts equally strongly with the white black-barred lower surface of the male and the dull rufous of the same parts in the female. In the Rock Bush Quail, the chin and throat are dull rufous, the chin often being, especially in the females, whitish, and in these latter the throat is unicolorous with the breast. It is difficult to represent colors accurately in words, but bright chestnut and dull rufous (*slightly* suffused in many specimens with a grey shade) are so different that this coloration of chin and throat ought alone to suffice to distinguish adults, at any rate, of the two species.

“2nd.—The long, well-marked yellowish white superciliary stripe which, in the Jungle Bush Quail, begins in males at the nostrils, and in females a little further back, and in both runs over the eyes and ear-coverts right down to the nape, averaging in males 1.15 and in females 0.9 in length. In the Rock Bush Quail the supercilium is by no means well marked, very narrow, and only just extends to the ear-coverts; in many specimens it is scarcely traceable. Moreover, the supercilium, such as it is, in the Rock Bush Quail is *immediately* above the eye and ear-coverts, whereas in the Jungle Bush Quail the long supercilium is separated from both eyes and ear-coverts by a narrow band of the same rich chestnut as the throat.

“Besides these differences there is in the males of the Jungle Bush Quail a well-marked yellowish white rictal stripe running under the eye and ear-coverts, while in the Rock Bush Quail there is only a faint trace of a pale line.

"The black bars on the lower surface of the Jungle Bush Quail are far more regular and better marked than those of the Rock Bush Quail. Indeed, in this latter species, it is only on the neck and breast that they are at all regular and continuous, while in the Jungle Bush Quail they are regular and continuous almost to the vent.

"In the females of the Jungle Bush Quail there is only a trace of the rictal stripe. The young males resemble the females, but have the rictal stripe well marked. At first the breast and abdomen is the same dull rufous, faintly suffused with grey as in the adult female; then the tips of some of the feathers become yellowish, then a dusky line appears above this tip, then the tip becomes whiter, the line becomes a dark bar, and above this a pale bar bounded by a dark line begins to show; lastly, the tips and bars become nearly pure white and blackish brown, the rufous disappears entirely, except about the vent, thigh-coverts, and lower tail-coverts. These parts, I may note, are always *rufous* in the Jungle Bush Quail, and a kind of pale dingy sandy hue in the Rock Bush Quail. I have also remarked that in this latter species there are almost invariably more or less distinct bars on the lower tail-coverts, whereas in the former species these are (in all the specimens I have seen) entirely without any trace of bars."

I may add that in one stage of the quite young Jungle Bush Quail the feathers of the cheeks, of the throat, sides of the breast and interscapular region are very conspicuously white shafted—a feature which I have failed to observe in any of my specimens of the Rock Bush Quail.

Again, as a general rule, the tertiaries and scapulars in the Jungle Bush Quail are very conspicuously blotched with black, and also usually have conspicuous yellowish white to reddish buff shaft stripes, both of which are almost entirely wanting or at most are but feebly reproduced in the Rock Bush Quail. But too much stress must not be laid upon this, because it only really suffices to separate nearly adult up to middle-aged birds. Since in very old specimens of the Jungle Bush Quail these blotches almost entirely disappear, while in quite young birds of the Rock Bush Quail these blotches are pretty conspicuous, though not nearly so much so as in the corresponding stage of the Jungle Bush Quail.

Both these species have been figured by Sykes, Tr. Z. S., Vol. II., pl. 2 and 3. They are not well figured, quite the contrary, but still they are *recognizable*, and Jerdon was quite right in assigning *Coturnix pentah*, Sykes, to the Jungle Bush Quail, and *Coturnix argoondah*, Sykes, to the Rock Bush Quail, but when it came to Latham's name, Jerdon was I think in error.

Carefully comparing Latham's description of his Asiatic Partridge, (*Perdix asiaticus*,) especially the passage "through the eye and behind brown, beneath it a patch of fringed whitish feathers, rufous in the middle," there can be no doubt I think that this name of Latham's *asiatica* was applied to the Jungle Bush Quail.

On the other hand Latham's name *cambaiensis* is either so bad a description as to be worthy only of rejection, or else applies to some non-Indian species.

It is true that Latham says, "inhabits India about Guzerat, a specimen in the British museum;" but his description, which is as follows, will apply to no Indian bird; it may apply to some Malayan bird. Mr. Gray, Hand List No. 9715, records a specimen from Malacca, but it certainly does not apply to either of our Indian species, and so far as they are concerned must be rejected.

The description runs:—

"Length, 6 inches; bill short, stout, pale, tipped dusky; body yellowish, rufous above, paler beneath, clouded with a deeper color, inclining to brown; wing-coverts tipped with a paler rufous, giving the appearance of two bands across the wings; legs yellow, hind toe without a claw."

Now neither of our species at any age exhibit an appearance of bands across the wing, and in neither is the hind toe destitute of a claw, nor indeed is any part of the description reasonably applicable.

It is quite impossible for me to work out the correct synonymy of these species, but I can say for certain that *rubicola*, Hodgson, is the Jungle Bush Quail. What *rubiginosa*, G. R. Gray, and *rubiginosa*, Val., or again *Cryptonyx rufus* of Temminck may be, I am unable to determine not having the works in which these species are described at hand to refer to.

Mr. Gould, B. of A., XV., pl. 12 and 13, gives us some beautiful figures of what he supposes to be the two species *asiatica*, the Jungle Bush Quail, and *argoondah*, the Rock Bush Quail; but all his figures *really* represent one species only, *viz.*, the Jungle Bush Quail, and what he supposes to be an adult female of *argoondah*, is merely the young of the Jungle Bush Quail before the chestnut of the throat has shown out.

So far as I can make out, the names of the birds should stand as follows:—

No. 826 of *Jerdon*. The Jungle Bush Quail.

***Perdicula asiatica*, Latham, Ind. Orn. II., 649, 1790;**
 Gen. Syn. Sup., II., 278; Gen. Hist., VIII., 281, 1823.
 pentab, *Sykes*. Tr. Z. S., II., 19, pl. 3, 1835.

rubicola, *Hodgs. M. S. S. Unde. Pub?*

rubiginosa, *G. R. Gray. Unde?*

asiatica et argoondah, *Gould*, (nec. *Sykes*) *B. of As.*, pt. XV., pl. 12, 13, 1863.

cambaiensis, *Jerdon* (nec. *Lath.*) *B. of Ind.*, II., pt. 2, 581, 1864.

No. 827 of *Jerdon*. The Rock Bush Quail.

Perdica argoondah, *Sykes*, *Tr. Z. S.*, II., 17, pl. 2, 1835.

asiatica, *Jerdon* (nec. *Lath.*) *B. of Ind.*, II., pt. 2, 583, 1864.

As I said before when dealing with these species in Nests and Eggs, I am quite unable to define accurately the range of the two species; the Jungle Bush Quail must be much the most common as we have just sixty specimens of it in our museum, and only twenty-five of the other.

The Jungle Bush Quail we have from near Simla; the Dhoon; Umballa; Mount Aboo; Anadra, at the foot of Aboo; Etawah; Mirzapore; Seoni, Central Provinces; Nursingpore; Raipoor; Valley of the Tapti, West Khandeish; Mahableswhar; Kelsi, Bankok, and other localities in the Southern Kon-Kan; Madras; and Pothanore.

The Rock Bush Quail we have from Delhi, Goorgaon, Aboo, Jodhpore, Sambhur, Beaur, Ajmeer, Etawah, Jhansi, Deesa, Kutch, Bassein and Coimbatore.

Mr. D. G. ELLIOT has recently published (*P. Z. S.*, 1878, p. 234) an admirable monograph of the *Pteroclidæ* similar to others, by which he has, from time to time, so materially contributed to the progress of ornithology.

He gives a key to all the known species, 16 in number, included in the two genera *Pterocles* and *Syrrhaptes*, of which the latter only numbers two species.

Of these 16 species, exactly one-half, *viz.*, seven *Pterocles* and one *Syrrhaptes*, occur within our limits, and a key to the seven former species, based on Mr. Elliot's more general one, may be useful to some of my readers.

Key to the Indian species of Pterocles.

A. Without pectoral band.

a. Stripe on each side of forehead, from nostril to above the eye, chin and centre of throat, black..... 1. *Pt. coronatus*.

b. Lores and band encircling back of head pearly grey; cheeks, ear-coverts,

- and throat orange yellow; centre of abdomen black..... 2. *Pt. senegalus*.
- B. With pectoral band.
- a. Without black bar on forehead.
- a'. Median rectrices not lengthened much beyond the rest.
Upper part of throat and sides of neck rufous; lower portion of throat black; band on lower part of breast, abdomen, and flanks black ... 3. *Pt. arenarius*.
- b'. Median rectrices greatly lengthened beyond the rest.
- a°. Throat yellow; black band across breast; abdomen and flanks chestnut 4. *Pt. exustus*.
- b°. Throat and stripe behind the eye black; sides of throat rufous; centre of breast chestnut, bordered above and below with black; rest of under parts white..... 5. *Pt. alchata*.
- b. With black bar across forehead.
- a'. Breast uniform greenish buff.
- a°. Lower part of breast bordered with a chestnut band, succeeded by a white one; rest of underparts yellowish white, barred narrowly with black; wing-coverts with two black bands, margined on the upper side only with white..... 6. *Pt. fasciatus*.
- b'. Throat pale buff; upper part of breast buff, crossed with numerous narrow black bars; middle of breast uniform buff, crossed in centre by a narrow black bar, and another of the same hue on its lower edge; rest of underparts yellowish white, barred narrowly with black..... 7. *Pt. lichtensteini*.

The *Syrrhaptes*, of which we have only one species (*S. tibetanus*) can be at once recognized by its toes densely and completely feathered above.

As regards our Indian species I will add a few remarks as to distribution in this country, as I have more information on this subject now than was available to Mr. Elliot.

1. *P. coronatus*.—Though comparatively rare, this species is known to occur throughout the more desert and hilly portions of Sindh, west of the Indus. It has once been killed in the Dehra Ghazee Khan district. It is believed not to breed within our limits. It is far from uncommon in the Cutchee of Khelat.

2. *P. senegalus*.—Occurs throughout India west of the 73° E. Long., as far north as the 33° N. Lat. It is extremely abundant in, and is a permanent resident of, the semi-desert portions of Sindh, where it breeds; elsewhere within the limits above referred to it is only a cold season visitant, and in most places rare or a mere straggler.

3. *P. arenarius*.—This species is merely a cold season visitant to this Empire, and does not breed within its limits. It is abundant (of course only in open comparatively waste country) throughout Sindh, the Punjaub, and almost the whole of Rajpootana north and west, of the Aravallis. Throughout the western and central portions of the N.-W. Provinces and the western districts of Oudh it is an occasional straggler to similar localities, and the same may be said in regard to its appearance in Gwalior, Indore, Rajpootana, south of the Aravallis, Khandeish, Northern Guzerat, Kattiawar and Cutch, except in the immediate neighbourhood of the Runn where it at times swarms.

4. *P. exustus*.—A permanent resident, widely spread throughout the country, and breeding in most places; excluding the extreme southern portions of the continent, Malabar, Lower Bengal, Assam and Burmah, it occurs almost everywhere in the plains, where the country is open and dry. As a straggler it has occurred, as recorded by Dr. King, even close to Calcutta, but as a rule it absolutely avoids damp soils and densely-wooded or hilly tracts, and is most abundant in sparsely cultivated, and unirrigated, but yet not wholly deserts tracts.

5. *P. alchata*.—A cold weather visitant merely, and as such abundant only in the Trans-Indus, portions of the Punjaub and Northern Sindh, and in Western Cashmere, but occurring as a straggler in suitable localities, from time to time, almost throughout Sindh, in Western Rajpootana as far east as the Sambhur Lake, and in the Punjaub as far east as near Delhi.

6. *P. fasciatus*.—A permanent resident. breeding freely with us. Occurs throughout India north of the 16° N. Lat., and west of the 85° E. Long., but only on and about the bases and in the neighbourhood of dry low rocky bush-clad or sparingly-wooded hills.

7. *P. lichtensteini*.—A cold weather visitant, in small numbers, to the more western desert and hill portions of Sindh. Since I first shot it in Upper Sindh, several specimens have been sent me from near Sehwan, from the Erie hills, and other localities.

8. *Syrrhaptes tibetanus*.—Only occurs within our limits, on the elevated desert plains of Ladak, but here very numerous in places, and a permanent resident. It is not as Elliot wrongly says near the *salt* lakes, but near the few, small *fresh* water lakes, that are dotted about here and there that it is most abundant.

I shall always be glad to put on record in STRAY FEATHERS notices of the occurrence of any these species outside the limits which my present experience leads me to assign to them.

“THE ASSERTION MADE by Dr. Jerdon, B. of I., 118, that “Mr. Phillips, under the name of *Strix javanica*, mentions it “(*Scelostrix candida*)” as living in long grass, and to be found “in abundance some miles from Hodal,” has often puzzled ornithologists in India. In the first place Hodal is entirely outside the area to which *S. candida* appears restricted; in the second place Hodal is impossible as a station for this species; in the third place it certainly does not occur there, where, besides casual visitors like myself, residents have searched for it for years.

Looking into the matter I find that there is not the *smallest grounds* for supposing that *Phillips* (not *Phillips*, as Jerdon gives it) ever referred to *S. candida* at all.

Mr. Phillips’ paper was prepared something like LeVaillant’s; only in Mr. Phillips’ case everything was done in good faith. He did not preserve any specimens, but he recorded descriptions, and to these descriptions Mr. Moore assigned names.

What it comes to then is, that some Owl was very common in the grass about Hodal, and this fact remains unchanged to this day. The grass swarms at times in the cold season with *Asio accipitrinus*, the Short-eared Owl. Of one of these Owls Mr. Phillips recorded a description.

Later in England Mr. Moore considered this description to have been intended for *Strix javanica*. As a matter of fact there can be no doubt that what he described was the Short-eared

Owl, which to this day, as Philipps' says, "may often be put up and chased by Hawks" as I have seen a wild *F. jugger* do near this very place. Considering how the identifications were made, I do not think that any weight can be attached to Philipps' paper, P. Z. S., 1857, 85.

FOLLOWING FINSCH, Mon. Pap., 263, and the Marquis of Tweeddale, Blyth's Birds of Burma, 57, I have in Vol VI, and previous volumes, adopted Wagler's name *melanorhynchus* for our Indian Blossom-breasted Paroquet No. 152 of Jerdon.

On myself examining the question I find that this is entirely wrong.

The question turns upon whether Buffon's Planche Enluminée No. 517, Perruche de Pondichery, represents the Indian or Javanese form.

The leading distinction between these two forms consists in the males of the former having the upper mandible red and the lower mandible blackish or brownish dusky, while in the latter both mandibles are red. Now in my copy of the Planches Enluminées the lower mandible is brownish dusky, not a trace of red about it. Again, referring to his copy of these plates, Schlegel remarks "L'individu de Buffon a la mandibule inférieure foncee."

Moreover, from the name assigned, although the fact is nowhere separately stated, it is evident that the specimen figured, and for the period very well figured, was brought from Pondicherry, at which place, as indeed everywhere along the west coast of the Bay of Bengal, specimens of this Parrot are to be constantly met with in cages brought by the native boats, which constantly pass to and fro across the Bay of Bengal from Chittagong and the Burmese coasts.

It does not appear to me that any possible doubt can exist as to the fact that plate 517 of the P. E. represents the Indian species; and I am altogether at a loss to understand how my friend, Dr. Finsch, can assert, *loc cit supra*, that this plate undoubtedly represents the Javan species. Now, on this plate were founded three names:

fasciatus, P. L. S. Müll. Supplement, S. N., 74, 1776.

vbrissa, Bodd., Tabl., P. E., 30, 1783.

pondicerianus, Gm., S. N. I., 325, 1788.

Linnæus did not include this species under a distinct name, though he may have included it in his extremely confused synonymy of one of the species of this group, and Müller's name is therefore the oldest and must stand.

The Javan form will, of course, stand as *alexandri*, Linn., if that name be not, as I am disposed to think it ought to be, rejected altogether—Linnæus' diagnosis being utterly valueless, and our only clue to the species intended being his primary citation from the *Amoenitates Acad.*, in which Odhel, as Dr. Finsch has clearly pointed out, gave a good description of a specimen brought from Java by Osbeck.

The specific synonymy of our Indian species will, therefore, stand somewhat as follows :

152.—*Palæornis fasciatus*, P. L. S. Mull. Suppl., S. N., 74, 1766.

vibrissa, *Bodd. Tabl.*, P. E., 30, 1783.

pondicerianus, *Gm. S. N.*, I., 325, 1788.

borneus, *Wagl.*, *Monogr. Psittac.*, 510, 1832, ? *nec. Gm.*

melanorrhynchus, *Wagl.*, *ibid.* 54, 1832.

mystaceus, *Hodgs.*, *Gr. Zool Misl.*, 85, 1844, *et auct. nec Shaw.*

nigrirostris, *Hodgs.*, *Ibid.*

barbatus, *Bly. J. A. S. B.*, XIX, 233, 1850, *et auct. ? nec. Gm.**

osbecki, *Horsf. and Moore.*, *Cat. B. Mus.*, E. I. C., II., 622, 1856. *et auct. nec Lath.*

javanicus, *Jerd. B. of M.*, I., 262, 1862, *et auct. nec. Osb. nec. Forst. nec. Gm.*

lathamii, *Finsch.*, *Mon. Pap.*, 66, 1868.

IT IS VERY UNGRACIOUS to look a gift horse in the mouth, and I feel that we ought to be grateful to Messrs. David and Oustalet for their work on the "Birds of China." At the same time it would not be honest to refrain from expressing a hope that a revised edition may be published at some future period. Great labor has doubtless been bestowed upon the work, and we all know how much Père David has done for Natural History, and no one who has visited the Paris Museum but will be ready to bear testimony to the courtesy and kindness uniformly displayed to all ornithologists by Monsieur Oustalet, but nevertheless the book that they have jointly produced cannot be said to do justice to either the explorations of the former or the erudition of the latter.

I do not speak now of the Atlas, the plates in which are possibly the best (bad as they are) that could be produced in Paris at the price. But the text contains so many errors that

* It is impossible to make certain what Gmelin's var. *barbatus* with its chestnut lores, really was.

I can only suppose that it was prematurely published before the authors had had time to revise it.

The very first page, and the very first species, illustrates the kind of error to which I allude.

That species is *Palæornis derbianus*, of which *Palæornis melanorhynchus*, Wagl., is given as a synonym; but the dimensions show that the true *derbianus* and not *melanorhynchus* is intended, viz., total length, 18 inches; wing, 9.85. The artist professes to have drawn to half scale, and figures a bird less than 16 inches in length, with a wing of 6.5. However he figures the green running up the nape and occiput, which is the case in *derbianus*, and not in *melanorhynchus*; and this, coupled with the figured dimensions given in the text, show that the true *derbianus* is referred to. In *melanorhynchus (fasciatus)*, of the Himalayas, Burma, and the Andamans I may mention that 15.5 in length is the absolute maximum; nine out of ten adult males are below 15.0; for the wings 7.0 is the maximum, and nine out of ten males have the wings below 6.75.

Well the text opens by informing us that "this large and beautiful Paroquet, which is common enough in Nepal and Arrakan, comes to pass the summer in the wooded valleys of the Upper Yangtze."

It is needless to tell my Indian readers that *melanorhynchus*, Wagl., is not a synonym of *derbianus*, and that *derbianus* has never yet been known to occur either in Nepal, Arrakan, or any other part of the British Indian Empire, but it may be useful to note that independent of the immense difference in size the wing in *melanorhynchus* never exceeding 7.0, and in *derbianus* running to 9.0, or more. The two species are distinguished amongst other points by the green of the back in *derbianus* running up on the nape and occiput, whereas in both sexes of *melanorhynchus*, the nape and occiput are unicolorous with the crown, and again by the breast in *derbianus* being much more of a lavender and much less of a vinaceous rosy than in *melanorhynchus*—the lavender or lilac in *derbianus* moreover extending considerably lower down towards the vent, than does the vinaceous rosy in the other species.

AFTER COMPARING a tolerably large series of the two forms, I am still doubtful whether *Gyps pallascens*, nobis, and *Gyps indicus*, Scop., should be considered specifically distinct.

The former appears to be the bird of Western and Central India, and it invariably breeds on cliffs, never in trees, though numbers of suitable ones may be growing alongside; the latter is apparently the bird of the moister, more eastern

region. It is extremely common in Calcutta, and occurs throughout Bengal, in the Terai, &c. It always breeds on trees.

Gyps pallescens is altogether a paler bird; it has the entire forehead, crown, and occiput densely clothed with brownish white hair-like feathers, and the nape, and back, and sides of the upper part of the neck completely clothed in white down. The chin and throat are also thinly clothed with hair-like feathers.

In *Gyps indicus* the entire head is quite bare, and there is only a slight dotting of down on the neck.

In *pallescens* the cere is horny bluish white, always very pale, and the face a sort of pale leaden blue, while in *indicus* the cere is nearly black, and the face dusky. The whole plumage of *indicus* is much browner and darker than in *pallescens*. The birds are both much of the same size, individuals of both species, however, varying much. The wings varying from 22 to 25 and upwards, but perhaps the legs and feet of *indicus* are larger, and they are certainly I think blacker.

Another point has to be noted. The young of *pallescens* is a precise miniature of the young of *himalayensis*, but I have met with no corresponding stage in *indicus*. On this point, however, I must not lay too much stress, for I have closely examined thousands of *pallescens*, but comparatively few of *indicus*. I am sending home a fine specimen of *pallescens*, which I shot off its nest at Ajmere this year, and I dare say Mr. Gurney will pronounce his verdict on this moot point.

MR. BROOKS REMARKS *in epist* :—

“I have a bird here I should like you to have—a skin of the African *Aquila navioides*, one of Anderson’s collections in Damara Land. It will be more useful to you than to me. It is a very typical bird. Did I ever tell you that I saw a number of the North-African Wokhab at Norwich in various plumages, from whitey brown or brownish white like our bird, to uniform brown, but the latter not so dark as a dark Indian Wokhab? It is a distinct bird from ours, though uncommonly close to it. Ours is often finely speckled, something in the *hastata* style, but more minute spots or light tip to feathers. This peculiarity is not observable in the African bird. Again, ours is often a piebald bird, almost, part of the body being very dark and part light, but the other is of uniform tone.”

“Again in the whitey brown dress our bird inclines to a yellowish tint, while the African one is more of a ruddy dull whitish brown. Lastly, the dark brown is of a different tone from a Wokhab, more reddish in the brown or a richer brown.

These differences, coupled with the general superior size of the African bird, would lead me to keep them distinct. Gurney, who compared them with me, was of *the same opinion*."

ANORHINUS AUSTENI, *Jerd. (Ibis, 1872, p. 6,)* has for long been a bone of contention amongst ornithologists, and Mr. Elliot recently wrote to me that he could make nothing of it.

In Vol. IV., p. 493, I reproduced the little Jerdon said about it, as also Major Godwin-Austen's (who was its discoverer) original description.

At page 60, Vol. V., I stated, on Mr. Blyth's authority, that the bird was no other than *Craniorrhinus corrugatus*, Tem. At p. 117 of the same volume, I described this latter species, and I pointed out that Major Godwin-Austen's description was utterly irreconcilable with what was known of *corrugatus*. In the *Ibis* for 1878, page 206, Major Godwin-Austen takes the matter up, and explains that Mr. Blyth was quite mistaken, and that the head, whatever it was, which he saw, and on which he founded his identification, was not his, Major Austen's *austeni*, the type of which was in the British Museum.

Major Godwin-Austen's conclusion is, (it must be remembered that he had no specimens of *tickelli* to compare) that his *austeni* is only the young of *tickelli*, and he adds: "*Asalu* is not by any means beyond the limits of range of *A. tickelli*, which follows the forest-clad range of mountains into Arrakan and Burma, migrating as certain fruits, on which they feed, come to perfection."

Now I have to remark on this first, that though Major Godwin-Austen may possess information not available to me, *so far as I know*, and to the best of my belief, *tickelli* never occurs anywhere near Arrakan, nor has it been observed anywhere as yet except in the immediate neighbourhood of the locality where Colonel Tickell first met with it, which is the hilly interior eastern portion of the Amherst district whence we procured two specimens, a male and female, and where many more were seen by Davison and Bingham. I have dealt rather fully with this species, Vol. VI., pp. 103-6, and after comparing my specimens with Major Godwin-Austen's original description, I am disposed to think that Major Austen is in error, and that his bird is quite distinct.

In the first place his bird, which he supposed to be a *young* one, seems too big. It far exceeds the dimensions given by Tickell; it exceeds the dimensions carefully recorded in the

flesh by Davison and Bingham, as will be seen by the following comparison of dimensions :—

Name	Sex.	Authority for dimensions.	Length	Expanse	Tail	Wing	Bill from gape.
A. Austeni	?	God Aust.	31.0		13.0	13.0	4.0
A. Tickelli	Female.	Tickell	26.75	37.0	11.25	14.0	4.57
"	Male	Bingham	29.4	40.0	12.0	13.6	4.9
"	Female.	Davison	27.75	38.75	11.5	12.25	4.3

Davison's is a mature female, an old bird ; Bingham's is a fully grown, but not mature male. The two differ in plumage, as already described, *loc. cit. sup.*

Now it is not probable that a young bird, such as Major Godwin-Austen supposes *austeni* to be, should be so much larger than our birds, one of which is fully mature and the other (though judging from the casque not fully mature) clearly by the plumage a full grown bird, and not a nestling or very young one.

Then again, while no part of the plumage of our male agrees well with Major Austen's description, there are certain points on which the discrepancy is extremely marked :—

1st.—“Throat and sides of neck white.”

There is no trace of this in our specimens.

2nd.—“Primaries greenish black, tipped and barred with white.”

The primaries are blackish brown, but not a bit greenish, and tipped with white in the young male, but there is not a trace of barring.

3rd.—“Base of the primaries white.”

There is no trace of this in either sex.

If *austeni* belonged to this species, it must be a male, for it has the bill yellowish white, and in the females the bill is blackish horny. Our young male has the head red, like the under parts, only rather browner and darker. If it be supposed that *austeni* is a still younger male than ours, then how comes it that it is so much larger?

On the whole it seems to me that we are scarcely as yet warranted in considering *austeni* to be synonymous with *tickelli*; and that bearing in mind the extreme probability of a nearly-allied representative species occurring in the North Cachar Hills, it will be advisable for the present to retain *austeni* as a distinct species until such time as material for a final conclusion shall be available.

THE OCCURRENCE of *Halcyon chloris*, anywhere on the west coast of India, has not hitherto been recorded. Mr. G. Vidal, of the Bombay Civil Service, has lately sent me several specimens from the Rutnagherry District, and has drawn my atten-

